

## INSIDE DOPE

by GEORGE F. TAUBENECK

Stories of the Week  
Gags of the Week  
Definitions of the Week  
Verses of the Week  
Be of Good Cheer  
Will Mao and Malenkov Agree?  
Wisdom of the Week  
Philosophy of the Week

### Stories of the Week

"See this chair I'm sittin' on here in the office? It cost me \$6,000."

"Wh-a-a-at? How could you be so extravagant? Why... when I think of all the things I could buy with \$6,000..." caromed the salesman's wife.

"Let me finish. It cost us \$6,000 last year, I figger, to set in it too long too often. Should have been out calling on customers."

"Why didn't you come in to see me about this infection sooner? It's serious now."

"Doc, you don't know my wife. Any time I'm the least bit sick she insists I must give up smoking, drinking, eating, and everything else."

### Gags of the Week

HOME COOKING IS WHAT MOST WIVES AREN'T.—Headline in the *New York Herald-Tribune*.

SOUTHERN LADY LIKES DOPE AND EDITORIALS.—Headline in *AIR CONDITIONING & REFRIGERATION NEWS*.

Really, we don't appreciate the rapidity of scientific advances. Used to be we heard static electricity over the radio. Now we see it on television.

A pessimist has defined ambition as working your head off at a job you don't enjoy, in a place you don't like, trying to save money you can't keep, in order to spend your declining years in idle boredom you can't stand, at some place you won't like any better.—*Wall Street Journal*.

### Definitions of the Week

**Monolog:** Woman conversing with a husband.

**Catalog:** Conversation between two women after their card-game "friends" (?) go out to the kitchen.

### Verses of the Week

The popular girl, it is easy to see, Is one with a figure whose grace is A marvel of litheness and symmetry; With bumps in their proper places.

The popular guy, on the other hand, Needs only one bump. To install it Is simple indeed. It must always Be planned To occur just over the wallet.

—RICHARD F. ARMKNECT.

John Stuart Mill, By a mighty effort of will, Overcame his natural *bonhomie* And wrote "Principles of Political Economy."

E. C. BENTLEY.

What if the rose-streak of morning Pale and depart in a passion of tears?

Once to have hoped is no matter for scorning! . . . A minute's success pays the failure of years.

—ROBERT BROWNING

### Be of Good Cheer

Dr. Clark Warburton, an economist who works for the Federal Deposit Insurance Corp., may have found the answer to Depressions. If he's right, a number of people should be interested—i.e., just about every man, woman, and child on the globe.

The essence of a depression, Dr. Warburton says, is less spending for goods and services produced by business enterprise. When people spend less, one of two things (or both) has happened. Either people kept money in their banks or pocketbooks—that they might have spent without going too far in the hole—or they had less money to spend in the market places.

The question is, does reduced (Concluded on Page 6, Column 1)

ISSUED EVERY MONDAY AT 450 W. FORT ST., DETROIT 26, MICHIGAN. ESTABLISHED 1926.



# AIR CONDITIONING & REFRIGERATION News

Vol. 69, No. 13, Serial No. 1271

July 27, 1953

Subscription Price, \$5 Per Year

Reentered as second-class matter October 3, 1936 at the post office at Detroit, Michigan, under the Act of March 3, 1879. Trade Mark Registered U. S. Patent Office. Copyright 1953, by Business News Publishing Co.

## Tecumseh To Produce New 3/4-hp. Unit, But It's Not a 'Pancake'

TECUMSEH, Mich. — Tecumseh Products Co. has tooled up for quantity production of a new single-cylinder 3/4-hp. compressor—but it is not the Tecumseh "pancake" type unit, as was erroneously reported in another publication.

The new single-cylinder model will in part replace the twin-cylinder 3/4-hp. compressor which is used in window air conditioners. It is a larger model of the single-cylinder design which Tecumseh has made in sizes up to 1 1/2 hp. However, it is not the flat "pancake" type compressor which has been used primarily in household refrigerators.

It is considered probable that there may be some reduction in the price of the 3/4-hp. unit, but Tecumseh officials would not state definitely what it might be at this time.

In tooling up for production of the new 3/4-hp. single-cylinder model at a rate that can go as high as 8,000 units daily, Tecumseh has spent some \$3 million in new tooling and plant facilities.

## Room Units Outsell All Appliances Combined In Chattanooga

CHATTANOOGA, Tenn.—Air conditioning units outsold everything electrical except light bulbs during June, a report from the Electric Power Board of Chattanooga reveals.

During the month, local dealers sold 3,080 units, as compared with 1,429 in May, and 995 in June last year. Total sales value was \$1,069,904.02. Average unit price was \$347.37.

During June, Chattanooga dealers sold more air conditioners than refrigerators, home freezers, ranges, water heaters, television sets, ironers, vacuum cleaners, clothes washers (conventional and automatic), clothes dryers, dishwashers, garbage disposers, and dehumidifiers combined. Total unit sales for all these appliances were 2,808.

Chattanooga has a population (1950 Census) of 131,000.

Air conditioners also outsold fans of all types by 70% during the month. Dealers sold 932 attic and window fans, and 908 portable fans in June.

The air conditioner sales figures do not include large air conditioning units of which 71 were sold during the month at an average unit price of \$1,326.50.

## Most Detroit Dealers See Room Cooler Sales Season Ending July 15

DETROIT—The room cooler sales season is over for Detroit dealers, according to those interviewed in a recent *News* spot survey.

Like their brethren in Chicago and St. Louis, they consider the season finished in the middle of July. A few dissenters, however, believed volume sales would hold up until Aug. 1. One dealer felt that if the predicted hot August arrives on schedule, good selling should continue even after that date.

But most of those interviewed declared that they had already, by July 15, ceased to promote room coolers. They indicated that they would try to sell out their present stocks, but would order no more this year.

As D. L. Cheney, senior partner in (Concluded on Back Page, Column 2)

## Treasury Sets Rules For Tax-Exempt Sales Of Unit Components

WASHINGTON, D. C.—In a Treasury Decision published in the July 15 issue of the Federal Register, that part of the excise tax law which covers sales of refrigerators to wholesalers for resale to manufacturers has been amended to "spell out" two methods to be used in obtaining tax exemptions for such sales.

The Treasury Decision does not affect the status of sales for repair and service work of such components as hermetic units of certain sizes and designs, air-cooled condensers suitable for such units, and temperature controls suitable for use with such units. The Treasury Decision states that "tax-free sales of such refrigerator components may not be made to repairmen or servicemen."

It is understood that the Air-Conditioning and Refrigeration Institute will continue its efforts to secure removal of the tax on such components sold for repair purposes.

The Treasury Decision amendment calls for the wholesaler to secure an exemption certificate from the manufacturer to whom he sells components (Concluded on Page 4, Column 4)

## Public Interest Aroused by 'Noisy' Room Unit Dispute

BROOKLYN — The case of the noisy room cooler, being fought in the Flatbush Magistrate's Court here, aroused considerable public interest and notice in the public press when it came up for hearing recently.

The question is: Who has the paramount right—the man who wants a room cooler to get a good night's sleep or the neighbor who claims he is deprived of his sleep by the noise the cooler makes?

But Magistrate Abner C. Surpless—the second magistrate to hear the question—came to no decision. He postponed the hearing to July 30, when an important witness will return from vacation—and another magistrate will be on the bench.

The complaint was filed by Mrs. Esther Gershberg, who says her family of three children and her taxi-driver husband have been unable to get a good night's sleep since mid-June when neighbor Sam Arkow installed a room cooler in his bedroom window. Arkow's bedroom is directly opposite the Gershbergs' apartment.

Arkow's lawyer Abraham Shapiro asked for a dismissal because Arkow (Concluded on Back Page, Column 1)

## Judge Stays Detroit's Sunday Closing Law

DETROIT—A temporary injunction preventing the city of Detroit from enforcing its Sunday closing ordinance against household appliance, furniture, radio, and TV dealers was issued by Circuit Court Judge Chester P. O'Hara last week.

The ordinance went into effect last July 2 but has been under a restraining order since that date.

It makes it unlawful for any person, firm, or corporation to conduct or engage in the business of selling, renting, leasing, or exchanging furniture, television sets, radios, and household appliances or keep open any store, office, or other place for the purpose of selling, renting, leasing, or exchanging such items on Sunday.

Judge O'Hara issued the injunction on the basis that the ordinance made no provision for stores to stay open where there is a matter of necessity or charity involved. In so doing it (Concluded on Page 4, Column 1)

## Crosley, Bendix Consolidate Under Single Management; Ericksen Named Avco V. Pres.

NEW YORK CITY—Victor Emanuel, chairman and president of Avco Mfg. Corp., announced recently that effective immediately the distribution of appliances and television and radio sets of the Crosley Division and laundry and kitchen appliances of the Bendix Home Appliances Div., will be consolidated under the supervision of a single distributor organization.

To implement this new sales policy, the Crosley and the Bendix Home Appliances Div. will be consolidated under one management with headquarters at Cincinnati.

James D. Shouse, one of Avco's senior vice presidents, who presently heads all Crosley operations in both manufacturing and broadcasting and is a director and member of the executive committee of Avco, will be general manager of the combined operations.

William A. Blees, vice president of Avco and general sales manager of Crosley for the past four years, will join the top executive staff of Avco (Concluded on Back Page, Column 4)

NEW YORK CITY — Parker H. Ericksen, newly-appointed director of sales for Crosley and Bendix Home Appliances Div. of Avco Mfg. Corp., has been elected a vice president of the corporation, it was announced recently by Victor Emanuel, chairman and president.



P. H. Ericksen

At the same time, it was reported that F. F. Duggan, general sales manager for appliances at Crosley, had resigned. Duggan had been with Avco for four years, both at Crosley and as general sales manager of the American Kitchens Div. His future plans were not disclosed.

A native of Burlington, Iowa, Ericksen has been associated with the appliance business for 21 years in sales and advertising capacities, most recently as general sales manager of Bendix Home Appliances.

## 1952 Volume on Cooling Products Equal to 1951

### Gain In Self-Contained Conditioners Offsets Other Declines, Says Census

WASHINGTON, D. C.—Shipments of components and accessories for air conditioning and refrigeration equipment in 1952 equalled the all-time high of \$213 million established in 1951, the U. S. Bureau of Census reported recently. This volume is at manufacturers' prices.

Big gains dollarwise over 1951 in shipments of compressors, compressor units, and self-contained air conditioning equipment were balanced by declining shipments of condensing units, heat-exchange equipment, and centrifugal refrigeration systems.

Shipments of condensing units last year totaled 698,473, valued at \$64,834,000, as compared with 840,176 units valued at \$75,672,000 during 1951, or a 17% decline in unit volume. Declines were found generally among the open type units and the very small hermetics. The larger size hermetics scored small gains over 1951.

A total of 1,677,300 compressors and compressor units valued at \$71,047,000 were shipped in 1952. This represents an increase of 50% in number and 25% in value compared with 1951. The gain for compressors using refrigerants other than ammonia was actually greater than that, for ammonia compressor shipments dropped by 25% from 1951.

The value of heat-exchanger equipment shipped during 1952 amounted to \$63,456,000, slightly under the \$64,935,000 reported for 1951. Shipments of centrifugal refrigeration systems, at \$14,040, showed a decrease of \$1,300,000 from 1951.

Shipments of self-contained air conditioning units totaled 424,105 units valued at \$133,101,000. This was a gain of 50% in unit volume and 42% in dollar value over 1951.

Of the total self-contained air conditioners, 357,106 units were of the window type as compared with 228,964 in 1951. Self-contained air conditioners other than window type numbered 66,999 as against 53,524 in 1951.

Referring to the accompanying tables, Table 1 presents a historical summary of the quantity and value of shipments of air conditioning and refrigeration equipment by class of product for the period 1948 through 1952.

In this table, the "Air Conditioning units (not self contained)" classification represents the "unit coolers, air conditioning" classification of previous years. Data for surface dehumidifiers which was included in this classification in previous years is contained in "Other heat-exchange equipment" for 1952.

Another change has placed 1952 data for self-contained air conditioning (Concluded on Page 17, Column 3)

## Servel To Raise Prices In All Lines Effective Aug. 1

EVANSVILLE, Ind. — Prices of Servel products will be increased effective Aug. 1, according to an announcement sent to distributors by W. Paul Jones, president of the company.

The extent of the price increases will be based on a study of production costs now under way, Jones indicated.

Since Servel's 1953 prices were announced last December, cost increases have continued to pile up, Jones said, pointing out that two (Concluded on Back Page, Column 1)

## IN THIS ISSUE

40% of City Dirt Consists of Tires, Cinders, Lime, and Pollen	5
How To Cut Noise In Water Piping	9
How ARI Engineering Committee Helps Sales	10
When Salesmen Become Half-Owners of Trade-Ins, Dealer's Profits Rise 4-6%	11
How To Apply Valves	12
What's New	13
Progress In Home Cooling	14
Refrigeration Problems—Carbon Monoxide	16
Air Conditioning, Refrigeration Equipment, Components Shipped 1948-52	17-18



## Ten Lincoln Area Appliance Dealers Join In Community Savings Stamp Plan

LINCOLN, Neb. — Seven Lincoln appliance dealers and three in nearby Crete have joined with about 100 other prominent local retail firms in inaugurating a Community Savings Stamp plan which is home-owned, and governed by officers and directors chosen from the incorporating group.

Heading the corporation is Ed Walt, co-owner of Walt's, Ltd., appliance retail firm. John M. Campbell, president of Miller & Paine department store, is vice president.

Walt pointed out that the stamp plan was designed as a community project. All merchants participating will purchase the savings stamps at the same cost. Every franchised dealer not only can issue the stamps but can also redeem the completed books without having to direct his customers to a central redemption station, which under the usual stamp plan is often located in a competitor's store.

Stamps will be issued at the rate of one for each 10 cents of sales. Each book has a capacity of 1,200 stamps, representing \$120 in purchases. Redemption value is \$2.50 in merchandise, or \$2 in cash.

Mechanics of issuing and redeeming stamps have been simplified and tailor-made to the customer's needs, Walt continued. The customer will be able to make practically all his purchases from participating firms, ranging from refrigerators to clothing and food.

Campbell declared that the Lincoln

trade area has become very stamp-conscious.

We have had repeated requests from many of our customers for some form of stamp bonus," he stated, "and the plan adopted is the finest we know. Not only all regular merchandise and services are included as bonus-purchases with stamps, but customers may take advantage of extra savings on sale-items and special-purchase offers.

One of the largest publicity campaigns in recent Lincoln history was used to introduce the stamp plan, including all publicity media such as a double-page in color in the Lincoln newspapers, newspaper advertising by participating firms, television, radio, and printed matter. "Starter" books and a complimentary page of stamps were mailed to all Lincoln and surrounding county residents, in addition to a large mailing outside the county.

Directors include John F. Lawlor, head of Lawlor's; Phillip S. Hardy, president of Hardy Furniture Co.; George C. Joy, co-owner of United Supply Co., Inc.; William L. Beachley, co-owner of the Lincoln Maytag Co.; O. T. Christensen, head of Christensen Farm Equipment Co. (International Harvester Co. refrigerator and freezer dealer); Milton Meyer, manager of Havelock Hardware & Supply Co.; Arnold Chap, proprietor of Chab Furniture Co. of Crete; David Osterhout, manager of Holmes Service & Supply of Crete, and H. R. Henken, proprietor of Henken's Electric Shop in Crete.

## Meat Packers May Take Over Packing To Stress Brands

NEW YORK CITY — "While the pre-packaging of fresh meats for self-service selling is being done by the individual market at present, the time is coming when the meat-packing companies themselves will take over this job."

That's the prediction of Jim Nash, veteran specialist in package designs for food products. He says the packer will assume the pre-packaging function "because of the first-class sales opportunity it affords to impress brand names and products on consumers."

"The present anonymous arrays of pre-packaged meats will, in the not-too-distant future, give way to smartly-designed packages that will accelerate sales for the packer's fresh meats."

Nash cites bacon as one meat that had long been pre-wrapped and had paid off in sales. He admits that fresh meat pre-packaging presents many problems for the packer but is certain they will be solved "with increased sales."

## 4 Firms Join NCRSA

PHILADELPHIA — Four new members have joined National Commercial Refrigerator Sales Association, it was announced at the group's headquarters here.

New distributor members are Loudon Mfg. & Sales, Inc. of Minneapolis; A. M. Schwartz, Inc., Cincinnati, and Everfrost Sales, Inc., Lebanon, Pa.

National Market Equipment Co. of Royal Oak, Mich., is now an associate member.

## Detroit City Council Votes To Exclude Auto Air Conditioning from Code

DETROIT — In less time than it takes to read this, the Detroit Common Council voted to amend the city's refrigeration safety code to exclude automobile air conditioning using Group 1 refrigerants.

This means the automobile manufacturers and service mechanics will need no license or permit from the city to install, service, or repair an automobile air conditioning unit, and no city inspection of such installations will be required.

The amendment was proposed by the city's Department of Buildings and Safety Engineering, which has the job of enforcing the refrigeration safety code. Commissioner Joseph P. Wolff contended that the code was not intended to cover automobile air conditioning.

However, the Refrigeration and Air Conditioning Contractors Association of Detroit, fought the idea for months. They resisted all efforts to exclude automobile air conditioning, arguing that the same safety problems were involved in automobile air conditioning as in any other refrigeration system. They had the backing of the National Refrigeration and Air Conditioning Contractors Association, which felt that what happens in Detroit will set a national precedent.

The amendment was supported by the Automobile Manufacturers Association and the Detroit Automobile Dealers Association.

## OTHER CHANGES

In addition to the deletion of automobile air conditioning, the amendment also made a few other minor corrections in the code.

One corrected a proofreader's error that inadvertently left out the phrase "nor contract to install, alter, or service" in the section governing license requirements.

That part of section 3.0 now reads, as it did in all previous codes, according to Frank Drogosch, chief engineer for the city: "No person, firm, co-partnership, association, corporation, or their legal successors shall install, alter, or service nor contract to install, alter, or service any refrigerant containing part of any refrigerating system in the City of Detroit without first securing a refrigeration contractor's license therefore."

A second change states that permits and city inspections are not required "for the installation of units and/or systems installed on commercial and privately owned vehicles on public thoroughfares for the purpose of producing refrigeration for trucks, trailers, busses, and similar conveyances, provided that such unit systems and/or units and systems comply with all other requirements of this Code."

This change was made to differentiate these types of vehicles from those used entirely within plants, Drogosch explained. Permits and inspections are required for in-plant trailers, he said.

A final change spells out the fact that enforcement of this ordinance by the Department of Buildings and Safety Engineering "shall not be construed as limiting the authority of the fire department or of the department of health of the city of Detroit."

## Hot Water In Condenser Causes Market Explosion

DETROIT — The explosion of a 1-ton refrigeration condensing unit at Vizzini's market here was caused by steaming hot water passing through the condenser, the city's Department of Buildings and Safety Engineering has reported.

According to the report, the barber who operates a shop in the same building as the food market, turned on his water heater in the morning and forgot about it. At noon, Vizzini heard a rumbling in the basement and ran down to see what was causing it.

He got there just in time to see the liquid receiver blow off, fly through a screened window, and crash against the heavy iron grating above the window well.

No one was injured and no damage was done—except to the condensing unit.

Frank Drogosch, chief safety engineer for the city of Detroit, reported that the fusible plug, located in a tee in the liquid line only an inch from the receiver did not let go, but the solder used on the receiver did. The plug was stamped for 158° F. and let go at 178° F. in a laboratory test.

The solder had a melting point of 390° F., by laboratory test.

"This indicates to us," Drogosch said, "that the temperature of the liquid in the liquid line was nowhere near the combined temperature and pressure in the receiver, which must have been around 390° F."

"Our conclusion is that the fusible plug should be installed in the pressure vessel itself and not in a line leading to the pressure vessel, and preferably above the liquid level in the receiver."

## KOCH REACH-INS REACH AN ALL-TIME HIGH!

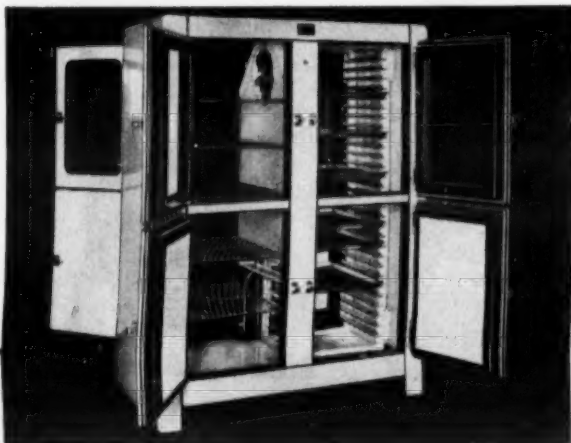
### HIGH... IN SALES

... Koch is quickly advancing to world leadership. The number of reach-in sales has QUADRUPLED since 1951.

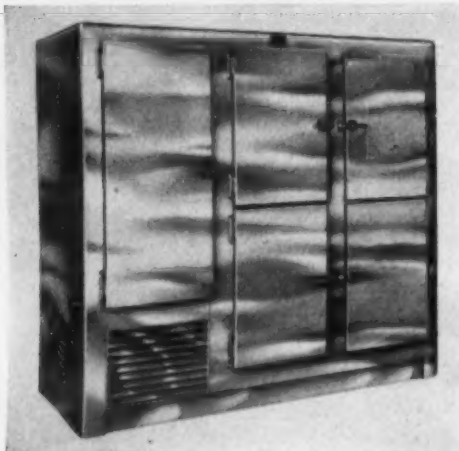
### HIGH... IN IDEAS AND ENGINEERING

... Koch constantly develops new models and improves existing ones. Below are three brand-new Koch reach-ins. Of course, variations of most standard Koch models, as well as specially designed and engineered cabinets for unusual applications are also available.

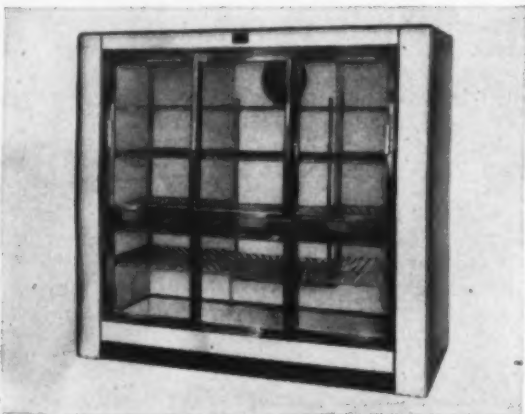
**KOCH Model 2845, Pass-Through Refrigerator.** Ideal where it is desirable to load the cabinet from both sides, or load from one side and withdraw from the other. Placed in the middle of a workroom or kitchen or in the wall between preparation and service areas, it provides production line food flow and saves lost motion. Adjustable bar-type wire shelves or pan slides. Glass or solid doors. Porcelain or stainless steel. 45 or 70 cu. ft. sizes. The newest Koch design and a sure favorite.



**KOCH Model 3865, 65-cu. ft. reach-in, finished in easy-to-clean STAINLESS STEEL.** This practical finish is available on most standard KOCH reach-in cabinets. Stainless steel is easy to clean and polish, and gleams bright as a dollar FOREVER. It is the finish preferred by many commercial and institutional kitchen operators. Matches and sets off other stainless equipment.



**KOCH Model 5870, new 70-cu. ft. reach-in with Thermopane SLIDING GLASS DOORS.** No opening into aisles... these doors make utmost use of floor space. Designed and engineered for use by any type of business that wishes to display as well as refrigerate perishables. Permanent no-sag features. White porcelain inside and out, or stainless steel, if you prefer. Also in 45 cu. ft. size. A natural for dozens of applications.



For Complete Information About Franchise Availabilities, Write or Wire Today!

SINCE 1883

**KOCH**

refrigerators, inc.  
NORTH KANSAS CITY 16, MO.

## A TYPHOON

FRANCHISE IS PROFIT INSURANCE

IN Air Conditioning

Air Conditioning Units  
1½-20 tons  
Multi-Packaged Systems  
Up to 60 tons  
Prop-R-Temp Heat Pumps  
2-20 tons  
Evaporative Condensers  
Packaged Water Chillers

TYPHOON AIR CONDITIONING CO., INC.  
794 Union Street, Brooklyn 15, N. Y.

## SENSATIONAL OPPORTUNITY

to sell an advanced line of Home Freezers. Priced for food plans or quick retail sales. Double or single door upright and chest models.

CHOICE TERRITORIES FOR DEALERS, DISTRIBUTORS and REPS—write today!

**Howard REFRIGERATOR COMPANY, INC.**

4745 Worth St., Phila., Pa.  
Export Div.—250 Park Ave., New York, N. Y.

## Carrier

THE LEADING COMPANY IN A GREAT GROWING INDUSTRY—AIR CONDITIONING

Will Employ

**SENIOR DESIGN ENGINEERS**  
**SMALL AIR CONDITIONING EQUIPMENT**

- Minimum of 10 years of design experience, of which at least 5 years must have been in the development of air conditioning equipment, or domestic and commercial refrigeration units.
- Graduate M.E., E.E. or equivalent.
- Long-range expansion plans offer substantial careers to qualified men.
- Outstanding insurance and retirement program.
- Salary: Open.

Send complete statement of qualifications and starting salary requirements to:

**CARRIER CORPORATION**  
**SYRACUSE, NEW YORK**

Att: Employment Manager, Supervisory & Technical Personnel

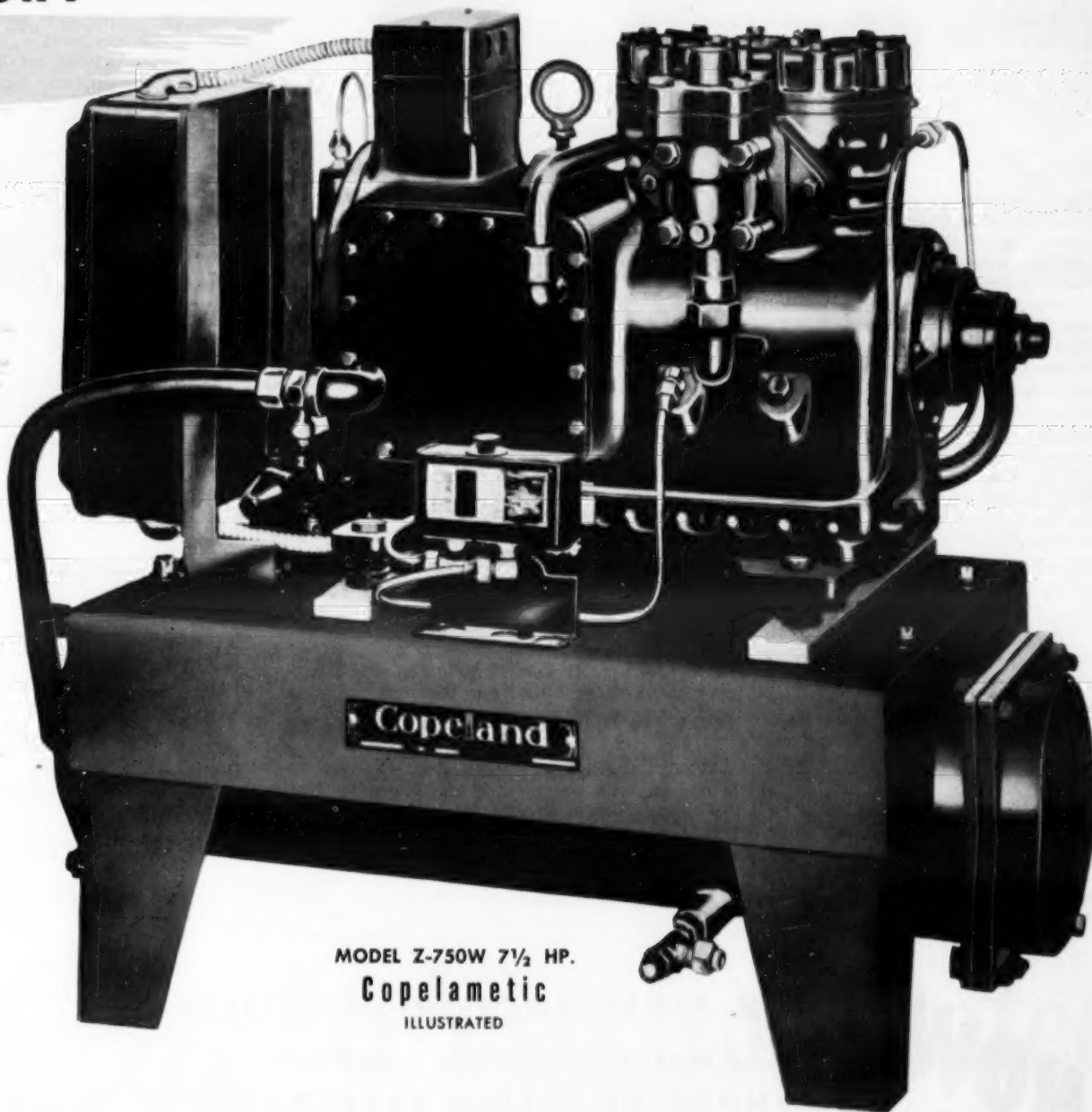


## What's behind a tradition?



Traditionally, America is a nation of coffee drinkers. While the popularity of coffee is world-wide, in America the descendants of immigrants from many nations have literally turned the melting pot into the coffee pot. Yet America's wide-spread use of coffee traces back to a "consumer's strike" in 1773.

Enraged by the British tea tax levied against the American colonies, American patriots protested with the Boston Tea Party and substituted coffee for tea as their regular beverage. Tea, while remaining the popular drink of the British, never regained leadership as America's most popular beverage.



MODEL Z-750W 7 1/2 HP.  
Copelametic  
ILLUSTRATED

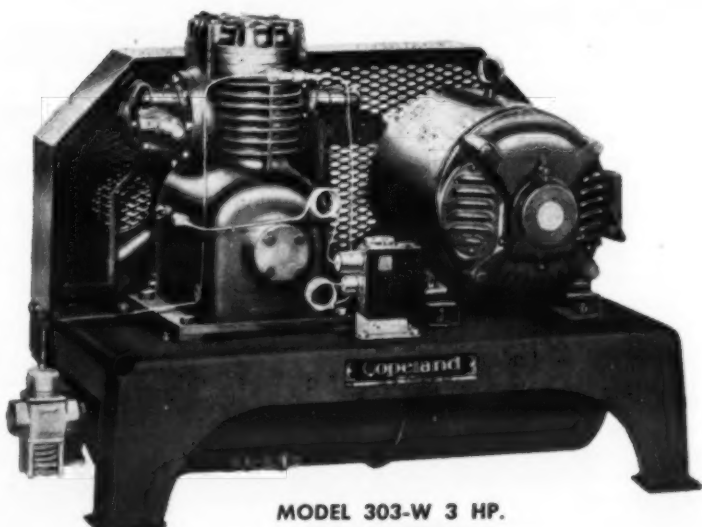
## the Copeland tradition... rare blend of many talents

Into a fine blend of coffee may go Bourbon Santos, Medellin Excelso and Bucamaranga . . . each providing a specific quality in its own special way. In the same way a variety of coordinated talents working toward a common goal have made possible the traditional quality that is Copeland's. Practical engineering ingenuity teamed with a thorough knowledge of refrigeration needs results in dependable refrigeration equipment. Add to that an equitable sales policy and friendly, appreciative personnel . . . that's Copeland.

COPELAMETIC, the Accessible Hermetic, is typical of the way Copeland engineers fill a definite need. There are no belts to wear out, no seals

to leak. Manual oiling is not required. Those features alone save up to 90% in servicing costs. But a still greater advantage in COPELAMETIC is "accessibility". These units can be serviced right on the job when the rare need arises. Yes, COPELAMETIC is outstanding . . . so much so that it set the pace for others to follow.

To serve every need, Copelametic the Accessible hermetic, is built in a variety of types and sizes. Air-cooled, remote Copelametics range from 1/4 HP through 3 HP. There are water-cooled remote units from 1/3 HP through 7-1/2 HP. There are Copelametics for all self-contained applications.

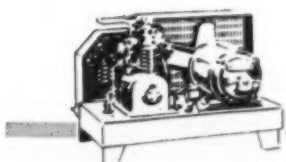


MODEL 303-W 3 HP.  
BELT-DRIVEN  
ILLUSTRATED

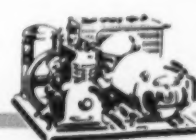
### Belt-driven units for all applications

The complete line of Copeland belt-driven units has an established reputation for maximum dependability. They are ruggedly built from the fabricated-steel base on up. Multi-belt drive increases belt-life. Condensers have large fin surface for top efficiency. The seamless, steel shell receivers are electro-hydrogen welded. All fittings are easily accessible.

Remote, belt-driven, air-cooled models range from 1/4 through 3 HP., water-cooled from 1/3 through 7-1/2 HP. There are several sizes of combination air and water-cooled models. Compact, efficient, belt-driven, self-contained models range in size from 1/6 HP through 1/2 HP.



**Copeland**  
DEPENDABLE *Electric* REFRIGERATION



REFRIGERATION UNITS (OPEN-TYPE AND COPELAMETIC) WATER COOLERS

COPELAND REFRIGERATION CORPORATION • SIDNEY, OHIO



## Sunday Closing--

(Concluded from Page 1, Column 4)

contravenes an old state law on the books since 1846 which prohibits doing business on Sunday except for works of necessity, charity, or the performance of marriages, according to Judge O'Hara.

In issuing his opinion, Judge O'Hara said:

"While it may be somewhat difficult to conceive of instances when the operation of these stores or the sale of the goods mentioned in the ordinance would become a necessity, nevertheless it is possible that emergencies might arise making it imperative to violate this ordinance and hence we would have a necessity.

"But whether instances would ever arise or not, the council has no right to ignore the permissive portions of this (state) law which provides for works of necessity or charity, and in so doing it has created an ordinance which is void under the foregoing authorities."

Judge O'Hara also said:

"There is no question in the mind of this court but what the city council . . . has the power to pass an ordinance regulating the furniture, television, radio, and home appliance businesses on Sunday, and also to prevent the operation of such businesses on Sunday, but it cannot do so in contravention of the general law of the state.

"Neither can the provisions of a municipal ordinance permit that which is prohibited by state law, nor prohibit that which is permitted by state law, and the provisions of an ordinance contravening the state law

are void, in the absence of specific statutory or charter power in the municipality."

The request for the injunction was brought by Muntz TV, Inc., which claimed that the new law would do irreparable damage to the goodwill built up by the firm through staying open on Sunday. It would also work an economic hardship on the company and its employees.

Muntz counsel, Meyer Leib, argued that there are many people who work all the other days of the week and have only Sunday in which to do their shopping.

He noted that the merchandise covered by the ordinance was of a nature that is generally purchased by husband and wife together, and which many wives would hesitate to purchase without their husband's concurrence.

Leib also said that appliances and television were also sold by drug-stores and gas stations that are permitted to remain open on Sunday and inferred that the city had no intention of closing such places.

Nathan Goldstick, assistant corporation counsel for the city, however, denied this and said that if any complaints were filed against drug-stores or gas stations selling appliances on Sunday, his office would take action.

## Roy Washbon Dies

WEST CHESTER, Pa. — Roy O. Washbon, who represented the Esco Cabinet Co. here in the New England area since 1930, died last month in Massachusetts General hospital in Boston.

He was interred in Elmira Heights, N. Y.

## Frigidaire Sales--

(Concluded from Page 1, Column 3)

first half of 1953 showed an increase of better than 25% over the same period of 1952. The company's air conditioning and commercial refrigeration sales are at an all time high, 53% above the first half of 1952.

Frigidaire's retail sales of refrigerators last month were up nearly 28% over May, with electric ranges up 16% and automatic washers up 5%.

"Credit for this increased business is due in large part to intensified selling activity on the part of dealers and salesmen throughout the country," Lehman said.

"It is doubtful that sales comparisons during the last half of the year will show increases as great as the first half, particularly because business was exceptionally good during the latter part of 1952," he explained. "Nevertheless, with continued aggressive selling, 1953 is certain to be an excellent year."

## Dates Set for SMI Meetings

CHICAGO — Dates for its four regional meetings for market managers next spring have been announced by Don Parsons, executive director of the Super Market Institute, as follows:

Eastern region, Feb. 8-9, Statler hotel, Boston.

Northern region, March 1-2, Blackhawk hotel, Davenport, Iowa.

Western region, March 22-23, Broadmoor hotel, Colorado Springs, Colo.

Southern region, April 5-6, Jung hotel, New Orleans.

## Tax-Exempt Sales--

(Concluded from Page 1, Column 3)

nents, and to pass on this certificate to the manufacturer of components, or a statement that he has such a certificate.

The manufacturer of components has the option of taking one of two methods of relieving himself of the tax liability in such sales. He can either pay the tax when he makes the sale, and take a credit when he gets the statement from the wholesaler that it is a tax-free sale; or he can make the sale without charging the tax, but within two months of the time of the sale he must obtain proof that it was a tax-free sale, and if he fails to do so, he must pay the tax.

Text of the Treasury Decision follows:

### Text of Treasury Decision

PAR. 20, Immediately preceding § 316.70, there is inserted the following:

SEC. 483. TAX-FREE SALES OF REFRIGERATOR COMPONENTS TO WHOLESALERS FOR RESALE TO MANUFACTURERS (REVENUE ACT OF 1951. APPROVED OCTOBER 20, 1951).

Section 3405 (b) is hereby amended by inserting "(hereinafter referred to as 'refrigerating equipment') before the period at the end of the first sentence and by striking out the second and third sentences and inserting in lieu thereof the following: "Under regulation prescribed by the Secretary, the tax under this subsection shall not apply in the case of sales of any such refrigerator components by the manufacturer, producer, or importer to (1) a manufacturer or producer of refrigerating equipment, or (2) a vendee for resale to a manufacturer or producer of refrigerating equipment if such components are in due course so resold. If any such refrigerator components are resold by the manufacturer or producer to whom sold or resold otherwise than on or in connection with, or with the sale of, complete refrigerating equipment manufactured or produced by him, then for the purposes of this section such manufacturer or producer shall be considered the manufacturer or producer of the refrigerator components so resold by him."

PAR. 21. Section 316.70, as amended by Treasury Decision 5854, is further amended by striking out the first sentence of paragraph (c) (4) and inserting in lieu thereof a new sentence to read as follows: "A manufacturer of household type refrigerators, other type refrigerators, household type units for the quick freezing or frozen storage of foods, other quick-freeze units, or refrigerating or cooling apparatus may purchase tax-free for use as components in the manufacture of such articles any of the refrigerating and freezing apparatus specified in section 3405 (b)."

PAR. 22. Section 316.71, as amended by Treasury Decision 5854, is further amended by striking out the last sentence of paragraph (b) and inserting in lieu thereof a new sentence to read as follows: "Sales of such refrigerating apparatus as component parts of complete refrigerators, refrigerating or cooling apparatus, or quick-freeze units are not subject to tax."

PAR. 23. Section 316.72, as added by Treasury Decision 5854, is amended as follows:

(A) By redesignating paragraphs (e), (f), (g), (h), (i), and (j) as paragraphs (h), (i), (j), (k), (l), and (m) and by striking paragraph (d) and inserting in lieu thereof the following:

(d) Prior to November 1, 1951, this exemption from tax does not apply in the case of a sale of refrigerator components by the manufacturer thereof to a wholesaler, jobber, dealer, etc., where such wholesaler, jobber, dealer, etc., does not qualify as a manufacturer of complete refrigerators, refrigerating or cooling apparatus, or quick-freeze units.

### TAX-FREE ON RESALE

(e) On and after November 1, 1951, a manufacturer of taxable refrigerator components, as specified in section 3405 (b), may sell such refrigerator components tax free to a wholesaler, jobber, dealer, or any other person buying for resale to a manufacturer of complete refrigerators, refrigerating or cooling apparatus, or quick-freeze units. Tax-free sales of such refrigerator components may not be made to repairmen or servicemen for repair or service work.

(f) In order to make a tax-free sale it is necessary that the manufacturer of the components (1) obtain from the wholesaler, etc., prior to or at the time of the sale and retain in his possession, a statement showing that the component is being purchased for resale to a manufacturer of complete refrigerators, refrigerating or cooling apparatus, or quick-freeze units, and (2) obtain proof that the component has been

so resold. Such proof shall be either an exemption certificate in the form set forth below properly executed by the manufacturer purchasing the component for further manufacture, or a statement by the wholesaler, etc., that he has obtained from his vendee, and has in his possession, available for inspection by internal revenue officers, such a certificate. The statement referred to in subparagraph (1) of this paragraph suspends the liability of the manufacturer of the component for payment of the tax for a period of two months from the date of his sale. If within such period the manufacturer of the component has not obtained proof of the tax-free character of the resale by the wholesaler, etc., then the temporary suspension of liability for the payment of the tax ceases, and the manufacturer of the component shall include the tax on the sale of such component in his return for the month in which such 2-month period expires. If such proof subsequently becomes available, a credit for the tax paid may be taken upon a subsequent return or a claim for refund may be filed at any time within the 4-year period of limitation prescribed by section 3313. Where the manufacturer of the taxable component has in his possession the evidence required by subparagraph (1) of this paragraph but elects to pay the tax instead of making a tax-free sale, he may take a credit or file a refund claim for the tax so paid when he has in his possession the proof required by subparagraph (2) of this paragraph.

### NOT MORE THAN ONE INTERVENING SALE

(g) The foregoing exemption and credit or refund provisions apply only where there is not more than one intervening sale between the manufacturer of the component and the manufacturer of the complete refrigerator, refrigerating or cooling apparatus, or quick-freeze unit.

(B) By striking out the words "refrigerators, refrigerating and cooling apparatus, or quick-freeze units" in the first paragraph of the "Exemption Certificate" and inserting in lieu thereof the words "complete refrigerators, refrigerating or cooling apparatus, or quick-freeze units."

### MORE INFORMATION? Use Handy Coupon on "What's New" Page

## Openings for Exclusive DISTRIBUTORSHIPS

Popular line of counter model refrigerated display cases. Requires direct selling to eating establishments, food stores, drug stores, taverns, bakeries, etc. Also to Dealers already established in most territories. Backed by National advertising program.

Address: Sales Manager

**LERN, Incorporated**  
Chicago 22, Illinois

## LARKIN

means

quality

•

LARKIN

WALL

HUMI-TEMP

Quality speaks a language everybody understands. Wholesalers, dealers, and users alike know that Larkin means quality — of workmanship, materials and performance.

Manufacturers of the original Cross-Fin Coil  
• Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils  
• Direct Expansion Water Coolers • Heat Exchangers • Disseminator Pans.

WATCHDOG OF THE NATION'S FOOD SUPPLY

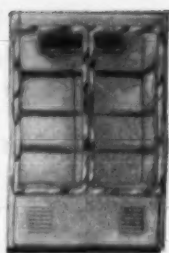
**LARKIN COILS**

319 MEMORIAL DR., S.E. • ATLANTA, GA.

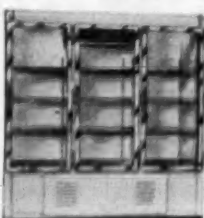
# NOW

## BARR MANUFACTURING COMPANY...

Offers Nationwide, the same  
HARMONY OF DESIGN, APPEARANCE and VALUE  
enjoyed by the West Coast for years.



Model  
400 GSC  
40 Cu. ft.



Model  
600 GSC  
60 Cu. ft.



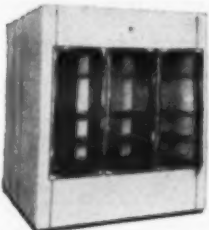
Model  
800 GSC  
80 Cu. ft.



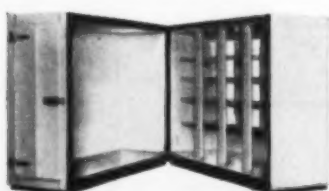
The **PROVED SERVUE**... Full Vision Doors (Pat. Pend.) Easy to install unitized frame. (Package includes — lights, shelves, UL approved.)

- **WHERE**
  - (1) New and remodel.
  - (2) Cut opening per size.
  - (3) Face interior of opening with 2x4's.
  - (4) Unit complete with shelves, lights and unitized frames.
- **NOW**
  - (1) Slip into place.
- **HOW**
  - (1) Determine number of doors.
  - **HERE**
    - (1) Minimum effort with maximum display.

### WALK-IN'S AVAILABLE IN 3 THROUGH 9 DOORS



Model 8300 GRM RI WI  
78 1/4" Wide  
82 1/2" High  
70" Deep



Model 8400 GRM RI WI  
102 1/4" Wide  
82 1/2" High  
70" Deep

### TOPS IN PROFIT

Peak selling 12 months a year

Barr Manufacturing Company can offer you a complete line of Reach-in Refrigerators to fit today's need. Capacity, 24 cu. ft. through 200 cu. ft., self-contained, or remote. Two, through ten doors. Increased demands for greater storage in less space, is the answer with Servue Reach-in's. (Pat. Pend.)

Five important Servue (Pat. Pend) points to remember are:

- (1) Gleaming Cleanliness.
- (2) Eye Level — See Ability.
- (3) Attractive lighted display.
- (4) Easy Reach-in convenience.
- (5) Maximum Display . . . Orderly Display.

All features, "MERCHANDISING MAXIMUM"



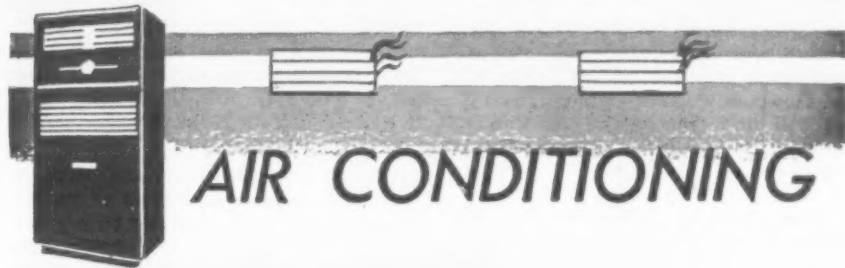
## BARR MANUFACTURING COMPANY

8925 San Leandro St. • Oakland 21, California  
LOckhaven 8-4758

SERVUE REACH-IN • WALK-IN • SERVUE FRONTS (Pat. Pend.)

Various territories open for dealers and distributors





### Store Modernization Group Hears

## 40% of City Dirt Consists of Tires, Cinders, Lime, And Pollen; Efficiency Rises with Air Conditioning

NEW YORK CITY—"Particles of rubber tires, soot, pollen, and harmful bacteria are four of the eight principal elements polluting the air in our large cities," stated J. F. Knoff, Chrysler Airtemp vice president, here recently.

Retail merchandisers attending the Fourth Store Modernization and Maintenance Show in Madison Square Garden heard Knoff also blame cinders and lime deposits, sand and grit for causing unfavorable shopping and working conditions during the summer months in the majority of the nation's retail stores.

"Air conditioning today does something about these conditions," Knoff declared.

"For many years now owners and managers of air conditioned stores have enjoyed better customer relations, cleaner merchandise, less need for repainting and cleaning of fixtures and drapes, and more comfortable conditions even during the trying holiday shopping season. Even a more cheerful breed of sales people work in air conditioned stores."

Knoff said a large department store in a southern city maintains a "bank" of packaged air conditioners on rollers with flexible connections. They are used to maintain an air conditioned atmosphere while major store renovations—requiring the disconnection of part of the central system ductwork—are completed.

"Three separate, recent studies point out the value of air conditioning in modern business life."

"Here is a breakdown of the elements found in the downtown air of one of our large midwestern cities. They are gathered on an electrostatic filter.

"Forty per cent of the dirt collected consisted of particles of rubber tires, cinders, lime, and pollen. Thirty per cent was coal soot. Twenty per cent was sand and grit, and 10% consisted of live bacteria.

"In another study conducted at Chicago's Michael Reese hospital, it was discovered that the best temperature for office personnel performing mental work was in the mid-70° range. Efficiency dropped off sharply as temperature went up. At 85°, a person works at only 80% efficiency. At 95°, efficiency is cut in half. The experiment shows that workers suffer an average 40% drop in efficiency during the hot summer months.

"A third study, conducted among actual users of air conditioning, revealed a claimed average efficiency increase of 20 to 30%. Translated into practical terms, under practical operating conditions, this increase means not only more work turned out, but fewer errors—a major factor in evaluating productivity."

Knoff also asserted that "It's possible now to carry on almost every indoor activity in comfortable surroundings . . . you can shop in purified air at the right temperature with the proper relative humidity."

"You can work in it all day long with more energy because the air is never too dry or too moist—it's never too warm or too cold. When the room temperature is kept between 70 and 80°, you can go out on the hottest day with none of the clammy feeling that people used to complain about."

Knoff urged the merchandisers to advertise the benefits of air conditioning to further interest people in spending more time shopping.

### Dryomatic Appoints New Midwest Representatives

ALEXANDRIA, Va.—Appointment of new sales and service representatives in the middle west has been announced by Anthony Hass, vice president and sales manager of Dryomatic Corp. here, manufacturer of adsorption-type commercial and domestic dehumidifiers.

The new appointees, and the territories served, include:

J. A. Currie, 7001 North Clark St., Chicago, for the Chicago metropolitan district; N. L. Pearson, 121 Downer Place, Aurora, Ill., for the remainder of Illinois; R. C. Schneider, R. C. Schneider Co., Inc., 6251 West State St., Milwaukee, for Wisconsin; O. R. Kreutziger and Warren Kjeldsen of the K & K Sales Co., 1953 University Ave., St. Paul, for Minnesota, Iowa, and North and South Dakota.

### Massey Firm Distributes Precipitron In Richmond

HYDE PARK, Mass. — Massey, Wood & West, Inc. of Richmond, Va., has been awarded a franchise as distributor for Westinghouse's home Precipitron—the electronic air cleaner. The announcement was made by W. B. Cott, air conditioning sales manager of the Westinghouse Electric Corp.'s Sturtevant Div.

Headed by Ivor Massey as president, Massey, Wood & West, Inc. has been associated with the heating, ventilating, and air conditioning business in the Richmond area for more than 25 years.

### Study on Heat Loss Finds

## Inactive Men Are Equally Comfortable In 72° to 76° Temp. with 30% or 80% R.H.

DENVER — Inactive men are equally comfortable at either 30% or 80% relative humidity in temperatures ranging from 72° to 76° F. Their skin temperatures are higher at 80% relative humidity than at 30%. Compared with women in similar environments, men have higher skin temperatures and greater heat losses by evaporation.

These are some of the observations of a research study made public at the semiannual meeting of the American Society of Heating & Ventilating Engineers here.

This research, sponsored by the society and the United States Public Health Service in cooperation with the University of Illinois, College of Medicine, was reported in a paper entitled, "Effect of Relative Humidity on Heat Loss of Men Exposed to Environments of 80°, 76°, and 72° F."

Three of the four authors are associated with the College of Medicine. They are Tohru Inouye, research assistant; Dr. F. K. Hick, professor of medicine; and Dr. R. W. Keeton, professor of medicine, emeritus. The other is Dr. S. E. Telser, who was formerly an instructor of medicine, College of Medicine, University of Illinois.

In the paper, the authors stated that the object of their research was to re-examine the effects of environments with widely different relative humidities on the partition of heat

loss of uniformly and lightly clad men and on their subjective sensations of thermal comfort.

Subsequently, 10 young healthy men were studied over a period of three hours in each of three environments having a temperature of either 80°, 76°, or 72° F. and a relative humidity of either 30% or 80%.

Eight women were studied in environments maintained at 80°, 76°, or 72° F. with a 30% r.h. Observations on skin and rectal temperatures, body weights, and thermal sensations were made after the subjects were dressed in the union suits. These subjects were non-fasting.

### Air Conditioned Negro Church Is First In Chattanooga

CHATTANOOGA, Tenn. — According to the Rev. M. H. Robbins, pastor, the Second Baptist Church is the first and only Negro church in Chattanooga, so far as is known, that has installed air conditioning.

During last summer, with temperatures up to 106 degrees, the congregation decided to put in air conditioning. Members voted to pay for the installation through three special efforts, or drives. One was called Men's Day, another Young People's Day, and the last will be Women's Day. The cost of the air conditioning installation was \$9,475.



## TORK TIME CONTROL

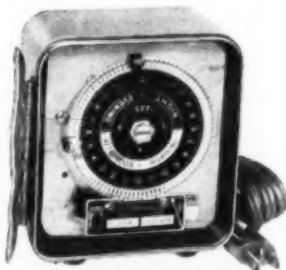
FOR Window or Built-in

## AIR CONDITIONERS

1. Turn ON and OFF automatically.
2. Plug in. No installation cost.
3. Add comfort, convenience, and economy.
4. Produce advanced cooling without waste.

### Featuring

Telechron Motor  
Hand Operation Any Time  
Portable-Plug-In  
Closed Case, Full Dead Front  
Simple to Adjust  
without Tools



FOR 115 VOLT  
60 CYCLE OPERATION

Distributed through recognized wholesalers in the air conditioning or electrical field throughout the United States.

No. 919—15 amp. single pole plug-in for daily operation. For 1/3 or 1/2 H.P. . . . \$13.95

No. 919W—15 amp. single pole with calendar wheel to automatically skip certain days weekly. For 1/3 or 1/2 H.P. . . . \$16.95

No. 919G—3/4 H.P. daily operation. 3-wire, 14 cond. polarized-grounded plug-in. Stand or hang. . . . \$19.95

No. 919GW—3/4 H.P. with calendar wheel 3-wire, 14 cond. polarized-grounded. Automatically skip any days weekly. Plug-in. Stand or hang. . . . \$22.95

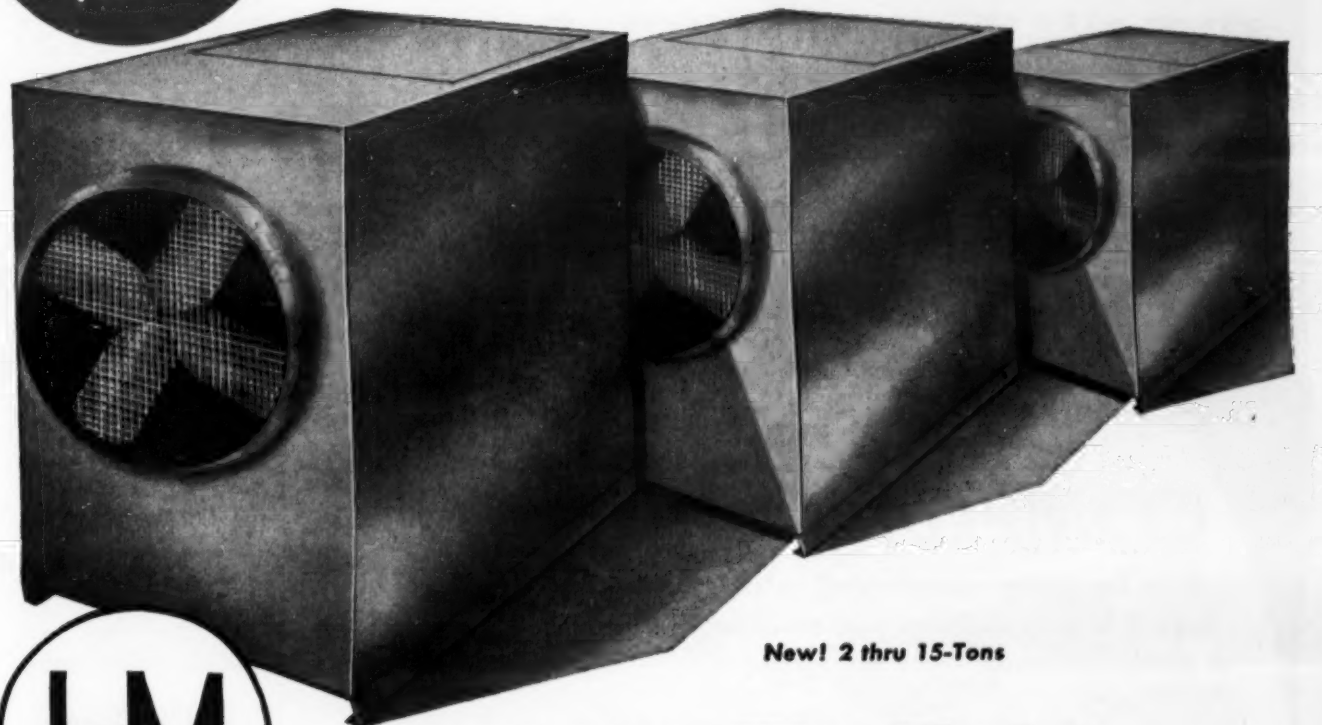
For 1 H.P. and Up, Installed Types, Ask for Free Bulletin No. 151

**TORK CLOCK CO., Mt. Vernon, N.Y.**

ANOTHER  
HALSTEAD &  
MITCHELL  
FIRST

## 20-Year Guarantee!

ON THE WETTED DECK SURFACE



New! 2 thru 15-Tons

HM

## RESIDENTIAL COOLING TOWERS

### PRICED FOR THE HOME MARKET

Price-wise these Halstead & Mitchell Residential Cooling Towers throw open huge segments of the home and small building market to air-conditioning. Here is the development for which the industry has been waiting. Check prices today!

### NOW REQUIRED IN MANY AREAS

Residential Cooling Towers recirculate precious water . . . meet requirements of municipalities which prohibit wasting cooling water to sewers. And low cost H&M units take residential air conditioning to the suburbs and rural area . . . recirculate from a cistern if need be!

### MADE FOR REAL OPERATING ECONOMY

Economical, lastworthy . . . low operating cost matches low initial cost. Efficient gravity-type distributing pan eliminates windage loss since atomizing by spray nozzle is unnecessary. Low pump head pressure is another bonus of gravity distribution. And maintenance is a snap!

### FAMOUS HALSTEAD & MITCHELL QUALITY

Here's all the quality for which Halstead & Mitchell Cooling Towers are world famous — including the 20-year Guarantee on the wetted deck surface of pressure-treated creosoted wood, against attack by rotting or fungi growth. Stainless steel fans and shafts, plus individual cabinet coatings of Vinsynite, Vinyl Zinc and chlorinated rubber add important years of life. The complete assembly is with Everdur bolts . . . disassembly is easy even after years of service.

### AT LEADING WHOLESALEERS EVERYWHERE

Write for descriptive bulletin from Halstead & Mitchell, one of the world's largest manufacturers of water-cooled Cleanable Condensers, and Cooling Towers up through 100-tons.

HM  
**Halstead & Mitchell**

OFFICES: BESSEMER BUILDING • PITTSBURGH 22, PA.



## INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1) spending precede or follow a shrinkage of the money supply? Modern economists have been saying that depressions begin with a decline in spending, rather than a smaller supply of money.

That's just the reverse of what economists thought 100 years ago. These old-timers figured that the supply of money shrinks first, and THEN people begin to spend less.

Dr. Warburton agrees. His studies show that by the middle of 1929, peak of the big boom, the nation's money supply had already been contracting for a year. This also was true in 1937, in advance of the 1938 recession. In fact, shrinkage in the money supply preceded almost all of the 40 recessions and depressions since the American Revolution.

Now for the remedy. Money supply in our country today is largely controlled by the Federal Reserve banking system. If the Federal Reserve banks operated so flexibly as to provide a rate of growth in the legal reserves of member banks for lending purposes—which would correspond to the rate of growth of our business economy—we need fear no major depression. It is not just a question of maintaining a constant supply of money. It is a question of increasing the money supply in proportion to the need.

Among the ways the Federal Reserve system can encourage a flexible supply of money: reducing the reserve requirements of banks (thus increasing their ability to loan money); permitting banks to borrow from the Federal Reserve at smaller interest rates; larger purchases of government securities to inject fresh money into the business bloodstream.

All these solutions fill the bucket, but don't necessarily incline the horse to drink. A combination of plenty of water and a thirsty horse is the objective.

### Will Mao and Malenkov Agree?

Interesting quotations from the writings and speeches of Joe Stalin follow:

"An Internationalist is he who, unreservedly, without hesitation, without conditions, is ready to defend the U. S. S. R. because the U. S. S. R. is the base of the world revolutionary movement, and to defend, to advance this revolutionary movement is impossible without defending the U. S. S. R."

"If any foreign minister begins to defend to the death a 'peace conference' you can be sure his government has already placed its orders for new battleships and airplanes. A diplomat's words must have no relation to action—otherwise what kind of diplomacy is it? Good words are a mask for the concealment of bad deeds. Sincere diplomacy is no more possible than dry water or iron wood."

"The party cannot be neutral toward religion and it does conduct

anti-religious propaganda against all and every religious prejudice because it stands for science while religious prejudice runs counter to science, because all religion is something opposed to science."

"We must draw up wage scales that will take into account the difference between skilled labor and unskilled labor, between heavy work and light work. We cannot tolerate a situation where a rolling-mill hand in a steel mill earns no more than a sweeper. We cannot tolerate a situation where a railway locomotive driver earns only as much as a copy clerk."

"The Government of the U. S. S. R. considers that, despite the differences in economic systems and ideologies, the co-existence of these systems and a peaceful settlement of differences between the U. S. S. R. and the United States are not only possible, but also doubtless necessary in the interests of a general peace."

### Wisdom of the Week

The desire for a fuller, richer life runs as an unbroken thread throughout the history of mankind. This yearning and aspiration to attain perfection is given expression in nearly every object of art. It is the dominant theme in literature and the inspiration of the world's great music. Religion, literature, music—these are the inseparable trinity to which man intuitively turns with faith and confidence for strength to hold a forward course unswervingly through every trial.

It is in these, rather than in the material things, that the spirit finds complete contentment. There irresist-

ible forces alone possess the power to exalt and unify, and have inspired the noblest deeds of valor and sacrifice. However difficult the path, everyone will find courage in the knowledge that the beautiful things in life endure for all time.

George Orwell, author of "Nineteen Eighty-Four," was for many years an influential English writer on the so-called "liberal" side. Although a member of the Labor Party, he finally wrote: "It was generally imagined that Socialism could preserve and even enlarge the atmosphere of liberalism. It is now beginning to be realized how false this idea was."

"The equivocal moral position of Britain, with its democratic phrases and its coolie empire, the sinister development of Soviet Russia, and the squalid farce of left-wing politics, have pulled the rug from liberal underpinnings."

"Why should writers be attracted by a form of socialism that makes mental honesty impossible? One has to belong to the intelligentsia to believe things like that; no ordinary man could be such a fool."

If one goes about thinking that the world is filled with crooks and schemers, the world is filled with crooks and schemers. But if one believes that the world is filled with fine, neighborly, helpful, kindly folks, one finds people of that class in the great majority.

### Philosophy of the Week

"America today is like a rich suburb surrounded almost entirely by slums."—STRINGFELLOW BARR.

"If we realize that the value of our dollar fluctuates and that the value of stocks fluctuates—almost always in opposite directions—and if we admit that we can't predict the future, then it would seem that our savings are safest when they're invested part in cash and part in stocks. And, it also follows, capital is most hazardously exposed at either extreme—all in cash, or all in stocks."—ROBERT R. RICH.

"A quiet home; vines of your own planting; a few books full of inspiring genius, a few friends worthy of being loved, and able to love in return; a hundred innocent pleasures that brings us no pain or remorse; a devotion to the right that will never

swerve; a simple religion empty of bigotry, full of trust and hope and love—and to such a philosophy this would will give you all the joy that it has."—ELBERT HUBBARD.

"To be a good talker, one needs a quick intelligence and fund of readily available knowledge. To be a good listener, one must be charitable, one must be sensitively aware of other people, and one must be interested in everything."—ALDOUS HUXLEY.

"It is my conviction that most Americans look forward to improving their economic status. Most people want better cars than they now own. They want to live in better houses than they now live in. They want more comforts and conveniences than they now have. This country is not dependent for its prosperity upon a war economy nor upon a continuous emergency-spending economy. If the American people continue in their willingness to work for the things they would like to have for themselves and their families, their increased productivity can substantially advance the standard of living of each generation."—HARLOW H. CURTICE, President, General Motors Corp.

"How can business itself provide the energizing force to maintain prosperity—and, more important yet, continued growth? The immediate problem, as everyone knows, is not the technical one of production. . . . The problem to solve is that of distribution—how to move the goods we are capable of producing. . . . There are two major points of attack upon this problem. Businessmen must exploit them both to the utmost. Each recognizes that the term 'market saturation' is a misnomer; the product of static thinking. A market is saturated only at a given moment, and at a given price. Business ingenuity is required: 1. To increase marketing efficiency, to cut the costs of physical distribution, to pass the savings on in lowered prices. Distribution efficiencies will have to be substantial to keep pace with the daily miracles of production efficiency. 2. To improve its techniques of selling, advertising and promotion, to create new larger demand, to revive the nearly lost arts of competitive selling, to use contracyclical advertising—to move goods by intelligent and aggressive salesmanship."—DR. RICHARD GLENN GETTELL.

## FOLLOW SERVEL SUPERMETIC'S FIVE-WAY SMOOTHER PATH TO PROFITS!

### EASIER

to install—saves time!

### TROUBLE-FREE

performance builds good will—more sales!

### COMPLETE LINE

sizes for every commercial refrigeration use— $\frac{1}{4}$  to 3 h.p.—enables you to meet the needs of every prospect!

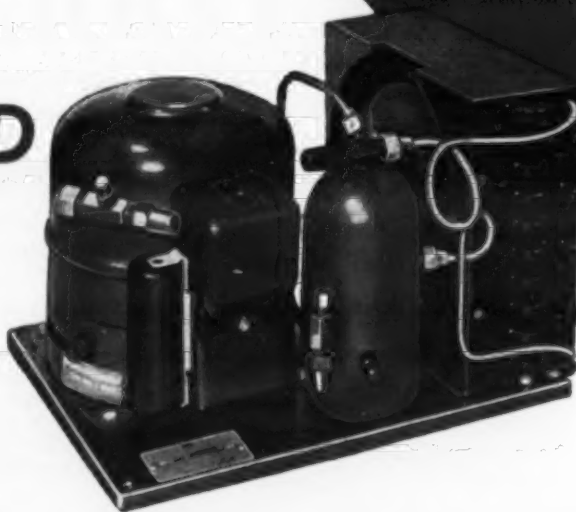
### QUICK AVAILABILITY

Servel Supermetics and complete installation supplies are stocked by your conveniently located Servel authorized wholesaler!

### FACTORY-BACKED

Servel's low-cost liberal warranty offers broadest protection for both you and your customers!

ASK your wholesaler for full details or write Servel, Inc., Electric Refrigeration Division, Evansville 20, Indiana.



## THE MOST ADVANCED FILTER-DRIER EVER DEVELOPED



REMCO'S  
**SUPER-FLO**  
with Molded Remcal Drying  
and Fiberglass Depth Filtering

### CHECK THESE ADVANTAGES AGAINST ANY OTHER LIQUID LINE FILTER-DRIER

**AMAZING PRICE:** Check SUPER-FLO'S price, for both original equipment and replacement, against ordinary driers which do not have massive depth filters, molded drying elements, and spun-end copper shells.

**DEPTH FILTERING:** A massive fiberglass bag, with unsurpassed depth filtering efficiency, to remove unprecedented quantities of even the most minute foreign particles.

**MOLDED DRYING:** The famous molded Remcal drying element, field-proven most effective for permanent refrigerant drying, even at liquid-line temperatures. Strong, stable, won't powder.

Available to the trade through wholesalers everywhere.

Plus . . . Spun-end Copper Shells . . . Free Flow . . . Sizes Thru 5-hp.



**Servel**

THE NAME TO WATCH FOR GREAT ADVANCES  
IN REFRIGERATION AND AIR CONDITIONING





THIS LARGE BEVERAGE cooler keeps beer, wine, and soft drinks ready for Sherman drugstore customers with no danger of shortages.

## Lots of Refrigeration Here

**Four 16-Cu. Ft. Units Serve Fountain; Chilled Beer, Soft Drinks Ready; Even Biologicals Are Cooled**

DENVER—Many types of refrigeration went into the new \$50,000 drugstore on the ground floor of the 300-unit Sherman Plaza apartment hotel here.

Pharmacist Rudolph Staab, head of the store, won a much coveted lease on the ground floor of the Sherman Plaza, one of the largest apartment hotels in the Rocky Mountain area, on the strength of his "advanced ideas" in drugstore merchandising. One of the things he stressed was an atmosphere in keeping with the apartments and well-appointed retail shops off the lobby.

To create this, Staab used white satin drapes around the two all-glass fronts which make up the south and west sides of the store. Suspended from the ceiling is a huge Swedish plaster chandelier. Walls throughout the store are done in washable green wallpaper, with a "shutter pattern," which contrasts blonde hardwood fixtures.

A departure from standard soda fountain installation is the U-shaped island fountain in the center of the store. A 17-stool installation, the fountain is so arranged that all other departments radiate from it. It is finished with a mahogany Formica top and lined oak facing, and is equipped with a completely stainless steel backbar.

To keep a complete inventory of fountain drinks and food specialties, Staab arranged for four refrigerated

compartments, built along the backbar and faced with the lined oak. Each of the four boxes has a 16-cu. ft. capacity. One operates at -10°, two at temperatures between zero and 35°, and a fourth at 45°. This makes it possible to keep large quantities of fresh fruits and fountain drink ingredients on hand the year around.

In the left-rear corner of the store, Staab installed a large reach-in dry bottle box. Custom-built of stainless steel, the 6-compartment box will accommodate sufficient chilled beer, mixers, soft drinks, and wines to meet a 3-day demand and guarantee against embarrassing shortages and disappointments.

Inasmuch as the Sherman Plaza is in a thickly-populated apartment district, refrigeration for bottled beverages was heavily emphasized.

Packaged chocolates and top-quality bulk candies are dispensed from a completely refrigerated showcase at the front of the store just inside the entrance. Sixteen glassed-in compartments are kept refrigerated at 35° to permit the sale of these perishable candies the year around.

Because of a demand for biological drugs, a small refrigerator has been built into the wall of the prescription department. Large enough to contain a month's supply of the products of five drug suppliers, the miniature refrigerator holds a constant temperature within 1°.

## Reach-In Whets Fountain Customers' Appetites, Increases Sales, Profits

FORT MYERS, Fla. — Tempting the fountain customer with a refrigerated display of salads, cold plates, and other food specialties has brought a sharp increase in fountain profits for Thrifty Drug Co. here.

Louis Batastini, head of the store, took a cue from large cafeteria-style restaurants when he installed a stainless steel, 5-level Jordan reach-in refrigerator behind the fountain backbar. Located where it can be seen, the refrigerator shows a dozen varieties of salads, cold plates, sandwiches, luncheon plates, fountain drinks, and ice cream specialties which encourage customers to better-priced orders.

The refrigerated case is far more popular than the menu in helping customers decide on their orders.

## Clarke Elected President Of United Commercial Sales

LOS ANGELES — Gordon Clarke was elected president of United Commercial Sales Co., wholesaler of refrigeration and air conditioning parts, supplies, and products here, at a recent meeting of the board of directors.

Clarke pledged himself to a policy of expansion through sound business practices such as more and better training for salesmen, more frequent sales bulletins to the trade, and a closer study of products handled so as to provide increased service to customers.

# Commercial Refrigeration

## Ideal Cooler Sales for June, July 70% over '52

ST. LOUIS—June and July sales for Ideal Cooler Corp. here will go slightly above 70% ahead of the same months of last year, reports Louis Weiss, president. This is particularly noteworthy since 1952 sales had set an all-time company high, he said. Ideal, which manufactures both draught and bottle type beverage coolers, overhauled its production facilities in the spring of 1953 and considerably enlarged production capacity and office space.

Weiss stated that his company now plans a further major expansion "so that we can take care of new customers as well as handle the increased demand from our present dealers."

## Frigid Igloo Mfg. Corp. Increases Plant Capacity

YONKERS, N. Y.—Frigid Igloo Mfg. Corp. has taken over another floor at their present location, 360 Ashburton Ave., and is now occupying the entire building.

According to S. James Krakow, executive vice president, the amount of space occupied is approximately 22,000 sq. ft.

## Grand Union Markets Date Pre-Packaged Meats for Freshness

EAST PATERSON, N. J.—Pre-packaged meats sold in Grand Union markets will all be dated so that the customer is assured the meat she purchases is fresh, store officials announced recently.

Each package will contain the notation: "Not to be sold after (date)." The date used will be no more than two days in advance of the day the meat was packaged.

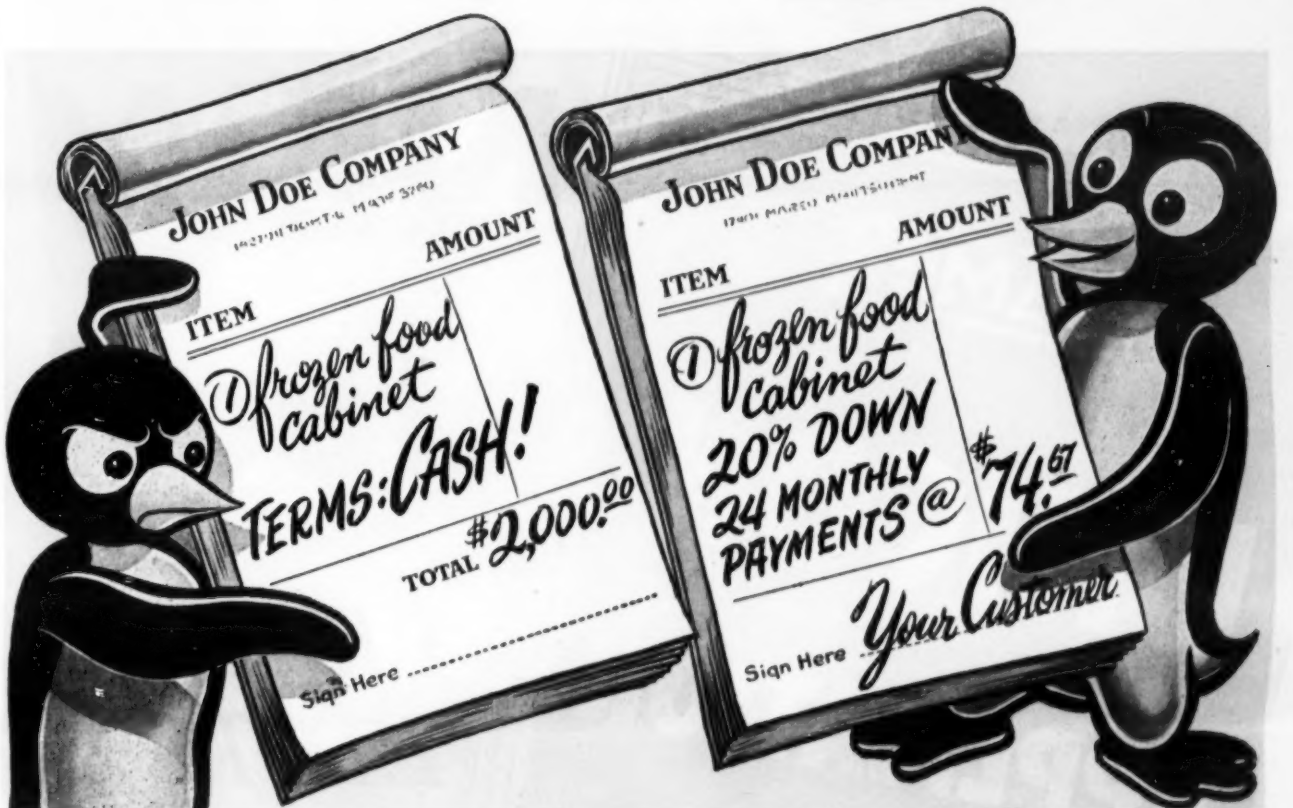
Store officials indicated that this was less time than necessary, but it gave the customer the benefit of longer storage time at home. If meat remains in the case after the expiration date, it is trimmed or otherwise made salable and repackaged. This time the expiration date is the next day.

Another advantage to the plan is that it forces the meat department manager to keep a close check on all meats put on display, store officials said.

The plan applies to fresh and smoked meats, poultry, and offal.

The Grand Union chain operates more than 300 markets in the north-eastern states.

**IF YOU WERE Your Prospect  
which order would YOU sign?**

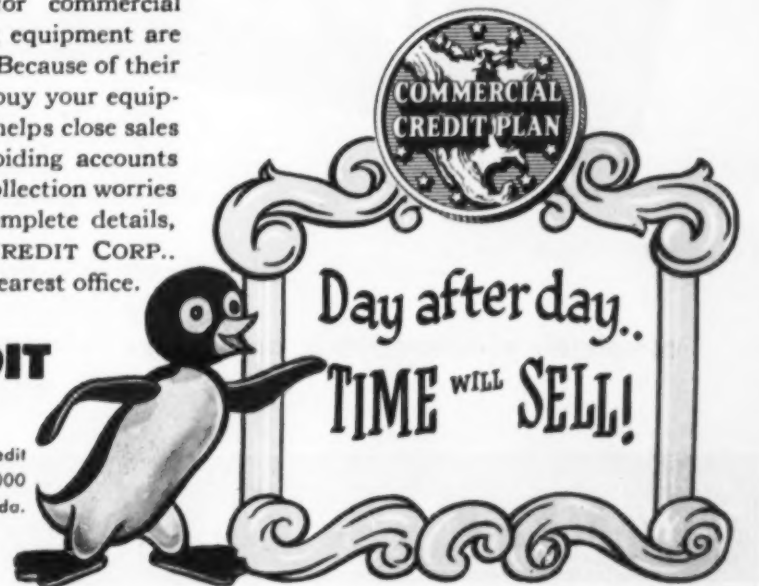


**Feature Time Payments to close more sales  
with the COMMERCIAL CREDIT PLAN**

**M**ORE AND MORE prospects for commercial refrigerating and air conditioning equipment are becoming, of necessity, TIME BUYERS. Because of their cash position it's the only way many can buy your equipment. The COMMERCIAL CREDIT PLAN helps close sales . . . improves your cash position by avoiding accounts receivable. And you turn your credit and collection worries over to COMMERCIAL CREDIT. For complete details, facts and figures, write COMMERCIAL CREDIT CORP., 14 Light Street, Baltimore 2, Md. or our nearest office.

**COMMERCIAL CREDIT CORPORATION**

A service offered through subsidiaries of Commercial Credit Company, Baltimore . . . Capital and Surplus over \$125,000,000 . . . offices in principal cities of the United States and Canada.

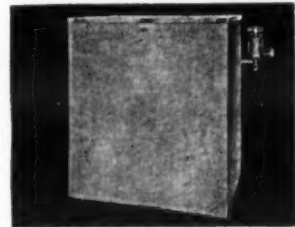


**For Recognized Quality - Extra Gallons**

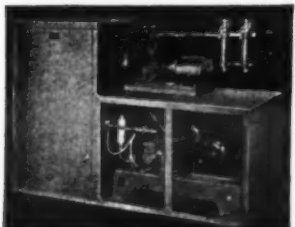
**Sell Your Condensing Unit**  
- Filtrine Water Coolers



Mess Hall-Cafeteria Cooler



Photographic-X-Ray Cooler



Typical "Packaged" Circulating Chilled Water System

Sell your condensing unit with remote models for new and replacement jobs—all applications. Capacities 10-1000 g.p.h.; storage 7-300 gals. Filters, Rectifier-Dechlorinators available for all sizes.

Promote your own condensing unit sales with Filtrine's 20-year-life construction . . . high capacity . . . Super Storage . . . more than 40 years' dependability.

**COOLERS FOR MESS HALLS — CAFETERIAS**

Conform with Fed. Spec. 00-C-566b

**COOLERS FOR X-RAY & PHOTOGRAPHY**

**PACKAGED CIRCULATING CHILLED WATER SYSTEMS**

**REMOTE COOLERS FOR ALL USES**

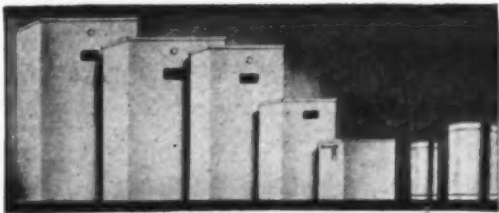
Sell your condensing unit with Filtrine Stainless Steel or Duco finished cabinets, equipped to suit with top/side shelves, bubblers, glass-fillers. Can be Taste-Master equipped to remove chlorine, rust, sediment from water.



Taste-Master

Sell your condensing unit with Filtrine models repeatedly named by V.A., Signal Corps, Air Force, etc. for X-ray and photo-labs. Under counter design and floor-mounted models with stainless steel work-table top. Filters (extra) to prevent scratched and pin-holed negatives.

Sell your condensing unit! Systems for drinking or processing water—completely packaged with pump, controls, your condensing unit factory installed. Capacities 5-400 g.p.h.; storage 5-150 gals. Filters and Rectifier-Dechlorinators (extra) to insure taste-free, sparkling water.



Remote Model Cooler

Write for catalog and Specification Guide

**Filtrine** FILTRINE MANUFACTURING COMPANY · BROOKLYN 5 · N.Y.

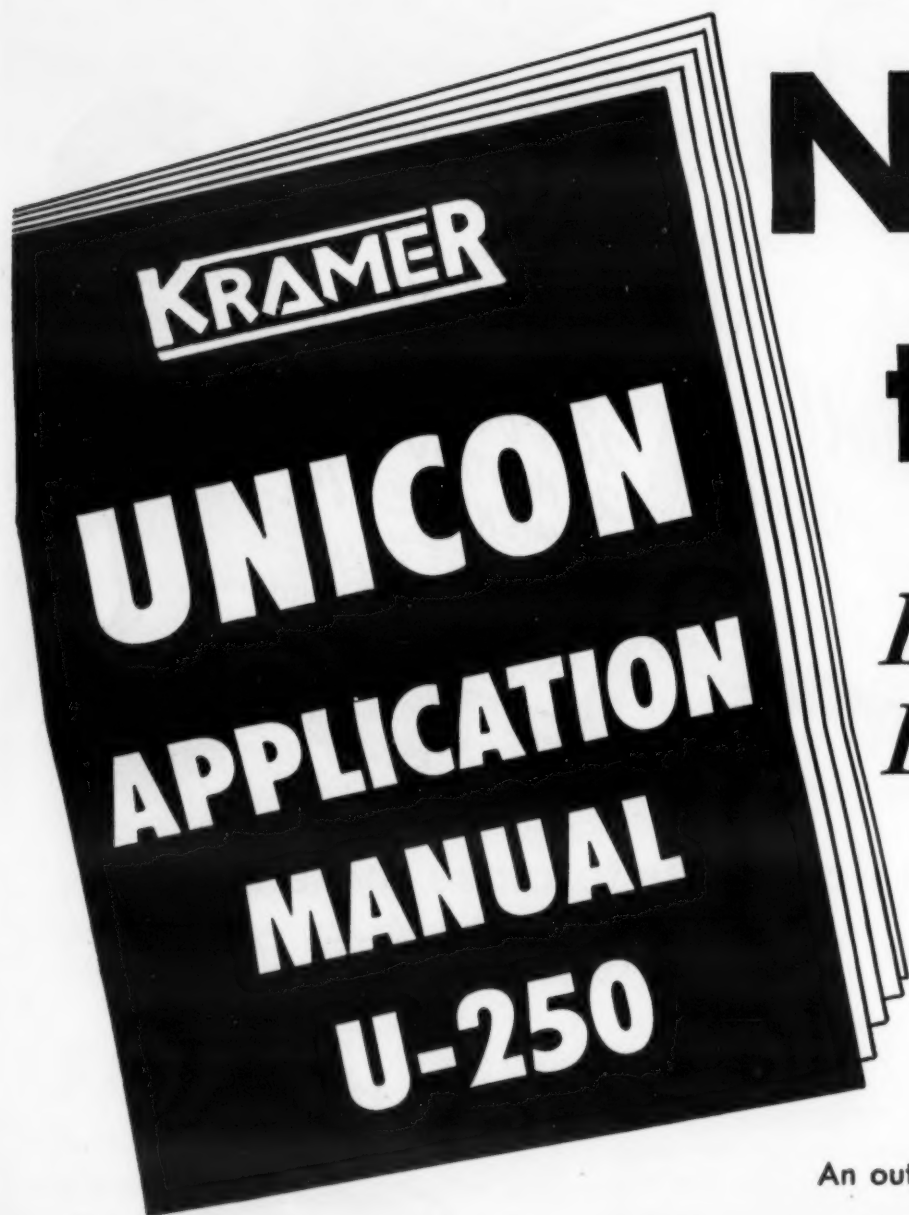
"Water Coolers and Filters for 40 Years"



## They'll Do It Every Time . . . . By Jimmy Hatlo



## Have You READ 'Peace and Progress' Yet?

a  
NEW  
tool!LIMITED  
EDITIONNOW BEING  
PRINTED

An outstanding contribution to  
the refrigeration industry—the first of its kind  
—with exhaustive and fully documented information on how to  
completely eliminate water on any size Refrigeration or Air Conditioning system.

KRAMER TRENTON CO. • Trenton 5, N.J.

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

Trade Mark  
registered  
U. S. Patent  
Office;  
Est. 1938AIR CONDITIONING AND  
REFRIGERATION NewsCopyright  
1953,  
Business News  
Publishing Co.

F. M. COCKRELL, Founder

## 'The Conscience of the Industry'

Published Every Monday by BUSINESS NEWS PUBLISHING CO.  
450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924.  
New York office: 521 Fifth Ave., Telephone Murray Hill 7-7158.  
Chicago office: 134 S. LaSalle St., Telephone Franklin 2-8093.

Subscription Rates: U. S. and Possessions, Canada, and all countries in the Pan-American Postal Union: \$5.00 per year; 2 years \$8.00. All other foreign countries: \$7.00 per year. Single copy price, 40 cents. Ten or more copies, 30 cents each; 50 or more copies, 20 cents each. Please send remittance with order.

GEORGE F. TAUBENECK  
Editor and Publisher

PHIL B. REDEKER, Editorial Director

C. DALE MERICLE, Associate Editor

JOHN SWEET, Assistant Editor

HUGH MAHAR, Assistant Editor

GEORGE HANNING, Assistant Editor

MARGARET DEAN, Assistant Editor

Editorial Assistants: PAT O'CONNOR,

JOY SLAUGHTER, C. J. BONDY.

E. L. HENDERSON, General Manager

ROBERT M. PRICE, Adv. Mgr.

ALLEN SCHILDHAMMER, Western

Adv. Mgr.

ALICE M. BARROW, Adv. Secy.

WALTER J. SCHULER, Production Mgr.

LLOYD SILER, Circulation Manager

CECILIA COSTYN, Subscription Mgr.

Member, Audit Bureau of Circulations. Member, Associated Business Papers.

VOLUME 69, No. 13, SERIAL No. 1,271, JULY 27, 1953

"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—Charles A. Dana.

Lucky Chances for Smart Freezer  
Dealers Right Now

To compound a fellow man's misery is despicable. However, to help a friend who is in trouble, and at the same time make capital out of it, is commendable. It's a Jackpot in business relations!

A wonderful and almost miraculous opportunity of this sort confronts the home freezer industry right now. The drought which has scorched southwestern plains provides an extraordinary opportunity for freezer and air conditioning salesmen.

This drought has hit all farmers in that area hard. Cattle ranchers have suffered the most. Range grasses burned out—practically nonexistent—and feed prices high. Cattlemen who control most of the nation's beef have no alternative but to sell off their livestock at a loss.

Result is that much more beef is going to market than is usual. The per pound price of choice calves is down to almost half what cattlemen were getting a year ago. (Note to housewives: Lower prices for beef are inevitable in the near future).

What can the home freezer industry do about this problem? Answer: Dealers can sell home freezers to people who don't have them, but need them.

Tremendous values in quantity beef purchases will be available soon—for a limited time only. Families which have to scabble for right-priced food should be advised.

Obviously this situation will benefit both retailers of home freezers and users of home freezers. How will it help distressed ranchers in the Southwest, and U. S. citizens generally?

To those who are familiar with the implications of an unprofitable rush of cattle to markets the benefits would seem to be these:

(1). Quantity purchases by home freezer owners can absorb excess beef supplies. Forward-buying will stabilize meat prices. Frozen foods storage provided by home freezers is greater than that of all commercial "cold stores" available in the U. S. Home freezer owners constitute a hidden storehouse for temporary surpluses of any perishable food products.

(2). When home freezer owners buy up extra cuts of cheap beef they relieve U. S. taxpayers of subsidies.

(3). Alarmed cattle raisers are selling their "foundation herds"—which normally they would keep to produce next year's calves. Thus a shortage of beef in 1954, with prices rebounding to perhaps the highest figures ever, is in the cards. Should large quantities of beef be stored in home freezers, it could ease the squeeze on predictable lean supplies in the future.

By promoting a purely selfish interest (saving money) the freezer dealer can perform a patriotic public service for the southwest and for his nation.



## Service & Supplies

### Pressure Drop over Series of Valves, Soft Rubber Hose, Flexible Supports May Cut Noise In Water Pipes

DENVER — Generation and transmission of noise in water piping and heating systems is an item of vital concern in the heating and piping industries. W. L. Rogers, assistant professor of mechanical engineering, Northwestern university, Evanston, Ill., declared at the semiannual meeting of the American Society of Heating & Ventilating Engineers here.

Prof. Rogers stated that for many years there had been a lack of knowledge concerning the generation and transmission of noises in water piping and heating systems, as these are related to water velocity, water temperature, pressure, pipe size, design configuration and pump vibration.

Due to the need for more information on the subject, a project was sponsored by the society in cooperation with Northwestern university to study the relationships of the variables involved and to discover and evaluate methods by which noise levels could be reduced.

The first step involved the design and construction of the experimental equipment in which the variables could be controlled. It was planned to investigate the noise characteristics of straight runs of pipe, of pipe fittings, and finally to allow for the insertion of pumps so that their noises could be studied and superimposed on various piping arrangements.

The experimentation to date has been of a qualitative nature, mainly concerned with the preliminary testing, stressed Prof. Rogers.

Although quantitative information was not available at the time of this study, he presented the following possible quieting schemes:

1. A given total pressure drop

should produce less noise if graduated over a series of valves instead of being taken across a single valve.

2. Liquid-borne vibrations can be effectively reduced by allowing the liquid to travel through soft rubber hose.

3. Another possibility for reduction of transmitted noise is offered by suitable piping arrangements which might introduce interference effects.

4. To reduce structural-borne vibrations, there are the possibilities of isolating the piping from noise (vibration) sources by suitable couplings, and of introducing damping.

5. Breaking the solid connections by using flexible supports to decouple pipe vibration from the building structure can sometimes prove helpful.

### A. J. Hackl Heads Dallas Sales Office for Trane Co.

LA CROSSE, Wis. — Appointment of A. James Hackl as manager of the Dallas sales office has been announced by Thomas Hancock, vice president in charge of sales for The Trane Co. here, manufacturer of air conditioning, heating, and ventilating equipment.

Hackl had been associated with the Jackson, Miss. sales office for four years prior to his commissioned officer reassignment in the U. S. Navy in 1951.

### Cissell Establishes Service Firm In Tarpon Springs, Fla.

TARPON SPRINGS, Fla. — R. H. Cissell has announced the opening of the Cissell Commercial Refrigeration and Air Conditioning Service at 606 N. Pinellas Ave. here. Cissell, who is a native of Indianapolis, Ind., lived for many years in California. He and his wife just recently came to Florida. He has been in the commercial refrigeration business since 1929, and in the air conditioning business since 1934.

### Central Wholesalers Plan Golf Outing, Dinner Aug. 4

CHICAGO — Eighth annual golf outing of the Central Refrigeration Wholesalers Association will be held at the Olympia Fields Country Club on Aug. 4. Harry Johnson, secretary-treasurer of the association announced recently.

Cocktail party and dinner are also on the program.

Tickets are selling at \$15 for all three activities, \$10 for cocktail party and dinner only.

### G. A. Israel To Represent Bell & Gossett In Florida

MORTON GROVE, Ill. — George A. Israel, Jr., has been appointed sales representative for Bell & Gossett Co.'s products in Florida, with headquarters in Jacksonville, it was announced by Ralph A. Patterson, general sales manager.

Israel, an engineering graduate from the University of Florida, will cover the same territory serviced by the late John A. Pastor. He had been Mr. Pastor's assistant since 1946.

Roy H. Cogburn, a graduate of the Milwaukee School of Engineering, has been named as Israel's assistant.

### Simons Makes Shift In Eastern Connecticut

Hartford, Conn. — Marshall Lewis, who has covered the Worcester, Mass. and eastern Connecticut territory for Joseph Simons Co., refrigeration parts wholesaler here, has suffered a heart attack and will be required to rest for some time, Joseph Simons announced recently.

During his absence, Russ Thomas of Holden, Mass., a Worcester suburb, will cover his territory, Simons added. "Marshall's job is going to be changed somewhat when he gets back into good condition again," Simons declared. "A bit of expansion will find him a little better situated."

### Service Firm Files Name

BUFFALO — A business name has been filed in the Erie County clerk's office for Refrigeration Service Co., 149 Broadway, Buffalo, by William J. Hahn.

### Wert Heads Worthington Technical Data, Training

HARRISON, N. J. — O. B. Wert has been appointed manager of the technical data and training section of the Air Conditioning and Refrigeration Div. of Worthington Corp., according to M. M. Lawler, assistant vice president and manager of the division.

In this capacity, Wert will have the responsibility for preparation of price manuals, data books, application manuals, and similar educational material. He will also be responsible for the preparation and operation of air conditioning and refrigeration training courses for Worthington and Worthington distributor personnel.

Wert has been with the division and its predecessor, the Carbondale Machine Co., since 1929. He graduated from Penn State College in 1928 with a degree in mechanical engineering.

He is a member of the American Society of Refrigerating Engineers and the Morris County Chapter of the New Jersey Society of Professional Engineers.

### Norris Heads Los Angeles Office for Imperial Brass

CHICAGO — The Imperial Brass Mfg. Co., has announced that James A. Norris, formerly with Kerotest Mfg. Co., has been placed in charge of Imperial's Los Angeles office and warehouse, and southern California and Arizona territories.

He will be assisted by Chester Weinert.



James A. Norris

### Triche, Laningham Named Field Representatives For Eston Chemicals

LOS ANGELES — Appointment of two new field representatives was announced at Eston Chemicals Div. of American Potash & Chemical Corp. here.

Jack Triche, who is widely known in refrigeration jobbing circles on the West Coast and the Midwest, will be in charge of the refrigerants distribution branch at St. Louis, serving Missouri, Kansas, and southern part of Illinois.

Truman E. Laningham, former entomologist at the Shell Agricultural Laboratory, Modesto, will serve Eston's basic chemical department in northern California, with headquarters at Modesto, according to the company.

# 5 WAYS BETTER



...the A-P Model No. 209 All-Purpose Valve

0 to 1 1/2-ton Freon 12.  
Pressure limit range,  
0 to 55 lbs. Available for  
Methyl and Freon 22.

**THE ONE VALVE YOU CAN USE FOR**

**ANY APPLICATION**  
A-P liquid charge makes the 209 a universal valve. Ideal for low temperature, commercial or air conditioning uses.

**ANY PRESSURE LIMIT**  
0 to 55 lbs. Simply turn adjusting knob to pressure recommended by compressor manufacturer for overload protection.

**ANY SUPERHEAT**  
Quick and easy adjustment. Any setting from 0° to 20° F... closest control at all temperatures.

**ANY POSITION**  
Functions perfectly in any position — upside down... any angle... even where valve is installed lower than bulb.

**ANY AMBIENT TEMPERATURE**  
A-P liquid charge allows mounting valve and capillary in any ambient temperature... with perfect control assured.

**THE Model 209 is the most versatile expansion valve ever offered to the trade.** It will take care of any type of application — low, medium or high temperatures, any superheat and any pressure limit. Just think what this adaptability means to you. No wonder alert jobbers all over the nation stock and recommend A-P valves.

**A-P CONTROLS CORPORATION**  
2460 North 32nd Street, Milwaukee 45, Wisconsin  
In Canada: A-P Controls Corp., Ltd., Cooksville, Ont.



Thermostatic Expansion Valves



Automatic Expansion Valves



Filters and Driers



Solenoid Valves



Pressure-Regulating Valves



Custom-Built Valves



Water-Regulating Valves



Pressure-Limiting Valves

**...For air... liquids ... gases... refrigerants**

**DEPENDABLE Controls**

**GREATER PROFITS**  
WITH THE *Moisturizer*  
VEGETABLE CASE



**NOLIN**

AVAILABLE IN 5" - 8" - 10" SIZES

IF ITS NOT A NOLIN ITS NOT A MOISTURIZER

**NOLIN**  
MANUFACTURING COMPANY  
1600 LLOYD STREET MONTGOMERY, ALABAMA

**NOW..**

**THE ICE-CUBER YOU CAN COUNT ON**

**FULLY AUTOMATIC**

**ICE-FLO!**

(SINCE 1947)



**FIVE ICE-FLO MODELS**  
Sizes from 1/2 hp. to 1 1/2 hp. The smallest makes 2520 deluxe size cubes daily. The largest delivers 10,800 per day. Pull out storage cabinets hold from 8 to 12 hrs. production.

**THE ORIGINAL Solid-Cube Ice Maker** for Hotels, Restaurants, Clubs, Bars, Cafeterias, Schools, Hospitals, Institutions, Drug and Chain Stores.

**A DOOR-OPENER** to better ice service, Ice-Flo automatically produces sparkling clear, solid, extra-large ice cubes in quantity at point of use. They neither mat nor stick together. Freezing compartment is self-cleaning. Cubes last longer in drinks and in storage because they are solid.

**DEPENDABLE • ECONOMICAL • STURDY**

WRITE FOR  DETAILED INFORMATION

**Esmond Manufacturing Company**  
ESMOND RHODE ISLAND





## How Engineering Committee Helps Sales

**Power Companies Refer Wiring Problems; Pamphlets Provide Information; Codes, Standards Get Attention**

HIGHLAND PARK, Ill.—A southern power company planned to add to its 1953 adequate wiring program recommendations that the bedrooms and the living room of dwellings be provided with isolated circuits to serve air conditioners in the summer, supplementary electrical heaters in the winter, or possibly window-type heat pumps the year-round.

This was reported to the Room Air Conditioning Section of the Air Conditioning & Refrigeration Institute recently by Robert W. Morgan, director of engineering, Fedders-Quigan Corp.

In describing how activities of the section's engineering committee aid industry sales, Morgan pointed out that in many cases, local power company complaints are referred to the committee for recommended solutions.

"A recent evidence of the help given one of the member companies in a certain area in the country is the ACRMA pamphlet entitled 'Room Air Conditioners Are Plug-In Appliances But...'"

(ACRMA—the Air Conditioning & Refrigerating Machinery Association—and the Refrigeration Equipment Manufacturers Association recently merged to form the ARI.)

### Pamphlet Counteracts Criticism

"This little pamphlet was prepared to answer power companies' criticism that room air conditioners are falsely advertised as plug-in appliances."

"This pamphlet is an educational piece which points out logical checks that must be made in applying a room air conditioner to a branch circuit. This pamphlet has been widely distributed, having reached a distribution of 150,000 copies with an additional 50,000 copies printed recently."

"The power companies throughout the country have been well pleased with this educational piece and are using it to a great advantage to the benefit of the entire industry."

To illustrate, Morgan quoted from a letter from the southern utility, which reported that it planned to use several thousand of the pamphlets in its educational program. The letter said, in part:

"In 1953 we expect to 'pep up' our adequate wiring program to include recommendations for an isolated circuit in each bedroom and the living room which will terminate in a receptacle under a window."

"We propose to advocate that this receptacle be used for air conditioning in the summer and supplement-

tary electrical heating in the winter or possibly a window-type heat pump the year-round. We expect to advocate that the isolated circuit in the living room be 220 volts and terminated in a polarized receptacle for the same purposes as the 115-volt circuits to the other rooms."

"We sincerely appreciate your assistance in rectifying the 'bad situation' and assure you and your organizations of our fullest cooperation."

"We are looking forward to a fine year for air conditioning in 1953 and will do our part in educating distributors, dealers, and electricians in the proper installation of the equipment so that the customer can best enjoy his purchase."

### Education Helps To Lift

#### Selling Burden from Dealers

Added Morgan: "We believe such education takes a great burden off the dealer selling the room air conditioner and also takes a burden off the power company in reduction in service calls and complaints."

Morgan noted that the engineering committee also prepares equipment standards and the cooling load estimate form. Regarding the latter, he said:

"The short form currently available has formed the basis for most of the slide rule calculators. The short form also serves as a final authority on checking troubles due to unknown factors in the salesman's load estimate."

"At the present time, the engineering committee is considering the preparation of an educational booklet on application of room air conditioners, which may include a table of average sizes of floor area which can be conditioned by various sizes of room air conditioners. This is an attempt to further simplify the use of the cooling load estimate form."

### Appliance Salesmen Need Simple Calculations

"It is appreciated that room air conditioners are sold by appliance salesmen who are not particularly technical in their thinking and for this reason they need any aid which will result in 90% of their jobs being applied without difficulty."

Another important function of the engineering committee, Morgan said, is the study of all codes, standards, specifications, local ordinances, etc., affecting the industry. In this connection, he referred to work done with Underwriters' Laboratories, including

a current item dealing with the reduction of service cord size to reduce the cost and bulkiness of the present service cords.

"The engineering committee has worked with manufacturers of service cords to secure samples of lighter cords for Underwriters' Laboratories to test and approve," he explained.

"No concrete action has taken place thus far, but the engineering committee is much encouraged on the cooperation we are getting from UL. We are sure the acceptance of room air conditioners would be improved with this lighter, cheaper cord."

### Committee Fights

#### Industry Battles

Two other committee functions cited are the organization of and participation in multiple committees for fighting industry battles, and co-operation with technical societies such as the American Society of Refrigerating Engineers in preparation and/or revision of testing codes covering air conditioning equipment.

"A recent revision of ASRE Standard 16-R was released, which code called for expensive test equipment which was felt would not be purchased by only the major manufacturers."

"Action by the engineering committee brought about a review of this revised code which resulted in another revision simplifying the test equipment without affecting accuracy. This, of course, resulted in appreciable savings to the manufacturer in setting up testing equipment."

Morgan also called attention to the committee's work on odor control, the casement window problem, and noise measurement, among other things. if

### Every Wage Earner over \$300 Is a Prospect

## Pushing Doorbells When Husband Is Home Gives Salesman Chance To Do Real Selling

SAN ANTONIO — Selling room coolers in San Antonio is simple—in method at least, Charles Thias, head of Thias Refrigeration & Appliance Co. here, has found.

Thias considers that every homeowner earning more than \$300 per month is a likely room cooler prospect, since the cooling season is an unusually long one in sunny "San Antonio."

So he sends his salesmen around in the evenings pushing doorbells, when the husband is most likely to be at home.

Thias has found that whether or not the homeowner has any intentions of buying a room cooler, he is almost always willing to talk about one.

This gives Thias' salesman a chance to clear up the surprisingly large amount of ignorance and misconceptions the public has about air conditioners.

"In a lot of cases, merely having a cup of coffee with the homeowner and spending 20 minutes in telling him something about coolers has resulted in an immediate sale," Thias said.

Thias handles three nationally advertised brands of room air conditioners and says he engineers every job personally. He feels that to install an air conditioner of inadequate capacity to do the job desired is worse than no installation at all. So he cannot convince the prospect

to buy one of adequate size, he drops him then and there rather than take a chance on dissatisfaction.

"When a homeowner is sold a ½-ton room cooler to do a job that requires a ¾-ton or 1-ton unit, he becomes outraged when it won't perform and tells his story to friends and neighbors, which hurts the market generally," Thias figures.

On the other hand, Thias has received referral sales originating from customers pleased with the installation job that Thias did.

During 1952, Thias concentrated on his old appliance customer list for air conditioner prospects. He offered as a special incentive to make the installation at no extra cost—which amounts to a saving of \$20 to the customer. The campaign was successful, he declared, and accounted for about 90% of his air conditioner volume.

This year, however, Thias is expanding his operation to include "cold canvassing."

It is a rule with Thias that when an air conditioner service call comes in, his serviceman drops everything else and makes that call. As nearly as possible, Thias wants to have a man on the repair job within 30 minutes.

There's nothing like an inoperative air conditioner on a window sill during a blistering hot day to send a customer's temperature soaring, Thias commented.

## Announcing Another Important New Development...

# ALUMINUM Room Cooler EVAPORATORS and CONDENSERS by REYNOLDS



### Here's Why Aluminum Is First Choice For Room Cooler Evaporators and Condensers:

All-aluminum evaporators and condensers assure rapid heat transfer—aluminum fins and tubes facilitate fast, economical cooling and efficient operation. All-aluminum evaporators and condensers can't rust, thus there's no danger of rust from these parts causing unsightly stains below the outside of the window.

Remember, also, aluminum's light weight aids in portability and ease of installation. Aluminum is strong—gives years of dependable service. Aluminum is economical, too. These and other aluminum advantages add up to serviceability, efficiency and economy unmatched by any other material... protect the quality of your products.

### Here's Why Reynolds Aluminum Fabricating Service Is First Choice For Producing Room Cooler Evaporators and Condensers:

Reynolds wide experience in refrigeration as one of the nation's leading producers of parts for this industry has pointed up the advantages in room cooler evaporators and condensers made entirely of aluminum. This experience—plus Reynolds skill, mass-production facilities and quality control from mine to finished product—assures production of all-aluminum evaporators and condensers to quality standards exceeding

industry requirements.

Remember—the tremendous room cooler market is just now opening up. One good way to get your share of this important business is to be sure your units offer top performance and top quality. All-aluminum evaporators and condensers from Reynolds Aluminum Fabricating Service can play an important part in your performance and quality story.

Your Dollars Are Still Worth 100 Cents in Aluminum!

# REYNOLDS ALUMINUM

BLANKING • EMBOSING • STAMPING • DRAWING • RIVETING • FORMING

## CUT FAN BLADE INVENTORY

# 50 TO 75%

**New "BURDCO" reversible interchangeable hubs meet every customer demand**

Hubs in 6 bore sizes adaptable to 3 or 4 blade fans, front or back hubs, clockwise or counter-clockwise, in all variations of pitches. Lock between blade and hub is positive. Pat. pend.

Blades designed to fit "BURDCO" hubs available in either rigid or rubber mount. Rubber mount type recommended when desirable to dampen noise from vibration.

Write for information  
alan e. BURDEN CO., inc.  
3352 Motor Ave.,  
Los Angeles 34, California

**BURDEN FANS**  
BLADES WITH A FOLLOW-THROUGH



**50 - 50 Split****When Salesmen Become Half-Owners of All Trade-Ins, Dealer's Profits Go Up 4-6%**

CHICAGO—Making partners of salesmen on trade-in transactions, with 50-50 split of either profits or losses, has proved profitable for both the company and the salesmen, according to Charles H. Jett, Jr., Jett's Appliances, Lexington, Ky.

He explained operation and results of the partnership arrangement at the midyear meeting of the National Appliance & Radio-TV Dealers Association.

Jett first pointed out that the store sells white goods only—ranges, refrigerators, and washing machines. It employs three salesmen who work outside with a half day on the floor every other day.

"Our volume for the past 12 months has been in excess of \$360,000," he noted. "Our market consists of about 115,000 people with 19,000 gas meters and 28,000 electric meters."

"There are 40-odd appliance dealers in Lexington, some of them well-known as discount houses with a 20% to 25% discount available to anyone who shops."

"As you all know, on white goods, if you are a carload buyer your margin will average about 35%. Yet, we have been able to raise this gross margin from 4% to 6%. This extra percentage is profit on used appliances."

Turning next to rentals, Jett said:

"Even though the rental business has gone to pot, we still had \$1,972.50 income from these rentals for the past 12 months, or, about one-half of 1% to add to that net profit figure."

"We started renting appliances back in 1940 and by 1950 had built the rental business up to \$10,000 a year income, averaging \$7,789.94 per year for 1947-48-49 and 50."

"Then, in January 1951, under Regulation 'W,' it became illegal and we were unable to rent appliances until June 1, 1952. Now, we are beginning all over again and, at present, have 30-odd contracts in force."

**HOW RENTALS WORK**

"Rentals on refrigerators, ranges, and washers work in this way: \$10 for the first month and \$5 per month thereafter for one appliance; each additional appliance \$7.50 for the first month and \$2.50 per month thereafter."

"In no case does the rent paid apply on the purchase price. The customer understands this at the time of contract."

"We service our rental equipment at 'no charge' (except for abuse). We aged our rental contracts, and found the average rental stayed out about 18 months, and, in fully half of the cases, we sold either a new appliance or the rental when the lease was concluded."

Continuing, Jett said that "probably the most important phase of this used business is selling trade-ins at a profit."

"If you are going to sell at a profit, you must buy right. And to buy right, the buyer must know what to pay and be interested in his buying so he will not buy at any old price in order to make a purchase."

"Since our salesmen are buyers of used equipment, as well as sellers of both new and used equipment, we decided to make them 50-50 partners in the trade-in business with full authority to appraise (buy, if you please) used appliances. If there is a profit, the salesman receives half and the store half; if a loss, it is also split 50-50."

**SALESMEN MAKE GOOD PARTNERS**

"The net result of this partnership during the past 12 months was \$33,116.18. Trade-ins sold with a net profit of \$8,300.28; \$4,150.14 for the salesman and \$4,150.14 for the store."

"Every refrigerator, range, and washer sold by us has average full list price, and, in addition, the salesmen have received \$4,150.14 above their full commissions."

"The top man in sales volume had \$1,620.05 net profit on his trade-ins; the second \$2,089.57, and the third \$440.52. This third man has been

**SALE specialty SELLING METHODS****No Mistake About It, Recorder Pays**

A WIRE RECORDER attached right to the telephone (note cord above hand) to record conversations has proved to be a boon to Robert C. Webber, Indianapolis dealer. It is particularly valuable on long distance calls, Webber says, when getting the correct quotation or figures may mean big money. Failure to hear correctly could result in a lost sale, or at best, an expensive call back to confirm what was said previously. Avoiding a single error, Webber asserts, will more than pay for the machine.

with us only since last September."

"In addition, we have—unsold—a partnership inventory estimated at \$5,000. On June 1 last year, we had no inventory because the store had owned all of the trade-ins for the past 18 months."

"We have worked under this partnership deal since 1935 with the exception of the year 1951 and half of 1952. Looking back at that period, I wonder why it took me 18 months to realize the store could not afford to own all the trade-ins. I think I must have had on a big blindfold called Regulation W and blamed all of my business ills on it."

**HOW PARTNERSHIP WORKS**

Jett explained that the partnership deal works like this:

"We list all new and used appliance sales made during a given pay period. The salesman is given credit for the commission (average 7%) on the list price of all new merchandise sold and all used merchandise that he sold which he did not own."

"Then, he is given credit for all used merchandise sold that belonged to him (less any commission due another salesman) and charged with all trade-ins taken in by him during this period."

"We then add up his total commissions and give him credit for same plus half of all his trade-ins sold; deduct half of the value of the trade-ins he has taken and half of any repair bills."

"This net figure—commissions plus half of trade-ins sold, less half of trade-in allowances, less half of repair bills—is his compensation for the period."

"Allowances made for any reason are borne half by the salesman and half by the store. For example, if

an automatic washer is sold at a fixed installation charge and the charge runs more than that made to the customer, the salesman pays half of it; or, if there is a mix-up on delivery and the merchandise is returned to the store, the salesman is charged with half of the extra delivery cost."

"On trade-ins, the store finances, furnishes display space and delivery; all other costs are borne equally. Repairs made in our shop, parts, and labor are charged at regular prices, the same as to a customer. Repairs made by others we share equally."

"There is a trade-in on at least 85% of our sales. We put a trade-in allowance—wherever possible—on top of the regular list; ranges usually have from \$10 to \$20 above the regular markup to take care of the 'junkies.'"

"Any special buys in refrigerators or washers are handled in the same way and the salesman receives half of whatever he can save."

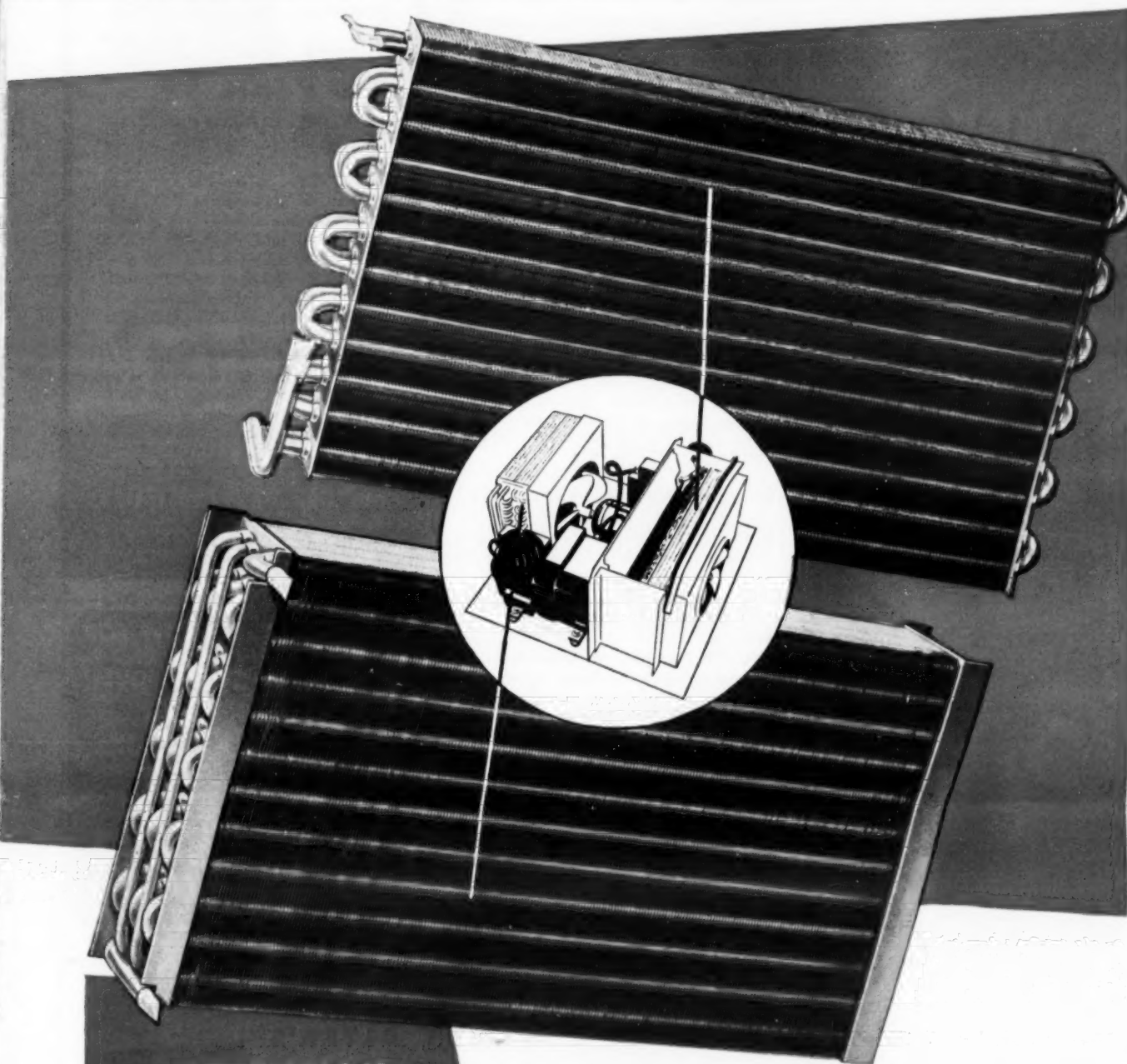
"We have had a 'Name Your Own Price' sale (no reasonable offer refused) twice with excellent results—both times our gross was over 38%."

**THE GOOD AND THE BAD**

"The good points of this partnership deal are:

"The salesmen are on their own and trade with confidence; they sell harder to get the trade-in at the right price; they never feel that the store is not giving them enough trade-in allowance; they never want to give a discount; they take pride in making money out of the trade-ins; they watch and keep trade-ins moving."

"Some objections are: They will miss a deal now and then trying to trade too low; they will sell a used appliance now and then when they should sell a new one."

**ATTENTION ROOM COOLER MANUFACTURERS!**

Reynolds Aluminum Fabricating Service is now engaged in important development work with industry people and is tooling up for production of all-aluminum room cooler evaporators and condensers. Delivery of these parts is scheduled for fall of this year in plenty of time for your 1954 models. For full details, contact the Reynolds office listed under "Aluminum" in your classified telephone directory, or write Reynolds Aluminum Fabricating Service, 2053 South Ninth Street, Louisville 1, Kentucky.

Write for your free copy of the new 16-page Appliance Parts brochure

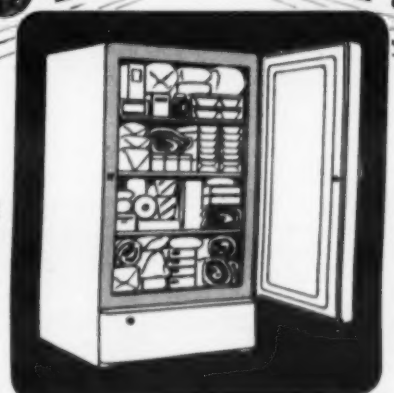
"Mr. Peepers" returns September 13 on NBC-TV

**FABRICATING SERVICE**

ROLL SHAPING • TUBE BENDING • WELDING • BRAZING • FINISHING

**1 YEAR • 5 YEARS 10 YEARS LOOK AHEAD**

— and you'll buy VICTOR today!



- Model VUC-18-A (No Inner Doors)
- 19 cu. ft. Upright (Also available with inner doors)
- The ultimate in Freezer compactness
- Many exclusive selling features



... Send for details of this Victor Upright

Quickfreezer and other items in the

Victor line that mean More Sales

... More Profitable Sales for You



VICTOR PRODUCTS CORPORATION  
HAGERSTOWN, MARYLAND  
MANUFACTURERS OF THE FAMOUS VICTOR QUICKFREEZERS



## HOW TO APPLY VALVES

By A-P Controls Corp., Milwaukee

This is another in the series of articles presenting application data on valves. Previous instalments discussed automatic and thermostatic expansion valves. With this instalment we take up evaporator pressure regulating valves. The articles are based on excerpts from the "Product Application Manual" prepared by A-P Controls Corp. and are published with permission.

### Evaporator Pressure Regulating Valves (1)

Evaporator pressure regulating valves are designed for service on multiple evaporator systems in which two or more pieces of refrigerative equipment are operated from a central condensing unit. Multiple evaporator systems are of two types: (1) single temperature systems, and (2) two temperature systems.

#### SINGLE TEMPERATURE MULTIPLE SYSTEMS

Single temperature multiple evaporator systems are those in which one refrigerant temperature is maintained in all evaporators. In referring to a single temperature multiple system, reference is made in all cases to evaporator temperature, not fixture temperature.

It is possible, of course, to maintain different temperature fixtures with the same temperature refrigerant in all evaporators. This can be accomplished by employing various types of cooling coils and by varying the amount of coil surface in-

stalled in the various refrigerated fixtures.

This type of system performs most satisfactorily when heat loads on the various fixtures are constant, with no heavy peak loads imposed at any time upon any of the fixtures in the system.

#### TWO-TEMPERATURE MULTIPLE SYSTEMS

A two-temperature multiple evaporator system is one in which the evaporators of one or more fixtures are operated at an average temperature higher than that maintained in the balance of the evaporators in the system. The purpose of this arrangement is to maintain various fixture temperatures although all evaporators are operated from a central condensing unit.

Again it is important to observe that the term "two-temperature" refers in all cases to refrigerant temperature and not to the temperature of the fixture.

#### REASONS FOR MULTIPLE EVAPORATOR INSTALLATIONS

A common reason for designing multiple evaporator systems of either single temperature or two-tempera-

ture type is the lower first cost of refrigerating equipment. A second reason for such application is the limited space which is often available for installing refrigerated equipment, particularly the high-side or condensing unit.

In the third place, it is sometimes necessary to install multiple evaporator systems to meet a customer's requirements or to meet the installation prices quoted by competitors.

#### FUNCTION OF EVAPORATOR PRESSURE REGULATING VALVE

In two-temperature multiple evaporator systems, it is necessary to employ special equipment to maintain the temperature of one or more evaporators at a point higher than the remaining evaporators in the system. It is the employment of this special equipment which makes possible a two-temperature system. Without it, only one refrigerant temperature multiple evaporator system would be possible.

#### DEVICE ALSO CALLED 'CONSTANT PRESSURE' VALVE

One of the most common types of regulating valves employed with two-temperature systems is an evaporator pressure regulating valve, sometimes referred to as a constant pressure or a C.P. valve. The evaporator pressure regulating valve manufactured by A-P Controls Corp. is the Model 235S valve.

Employment of this evaporator pressure regulating device at the outlet of the higher temperature evaporators will provide the evaporator temperature differences which are required for satisfactory operation of multiple evaporator two-temperature systems.

### New Lightweight Plywood Cold Storage Door Weighs 100 Lbs.

KANSAS CITY, Mo.—A new lightweight cold storage door featuring marine plywood and fibreglas construction has been announced by Cleo M. Lingle, president, Lingle Refrigerator Co., Inc., here.

"The cold storage industry has been asking for a door that would not only hold down inside temperatures, but also lighten the work of entering and leaving cold storage rooms and thus save both time and effort," Lingle said. "The new Lingle door meets these particular specifications."

The Lingle door weighs 100 lbs., while ordinary dimension lumber doors usually weigh around 135-140 lbs., or more than a third more, Lingle stated.

Other characteristics of the door are the use of heavy cadmium hardware, stainless steel kick plate for foot-closing, joints metal reinforced, three hinges instead of two, multiple board-type glass fiber insulation in one-piece metal pan, and metal threshold.

### Manitowoc Plans Export Of Upright Freezer Line

MANITOWOC, Wis.—Neuert, Wilton & Associates, Inc., Chicago, has been named to handle export activities of Manitowoc Equipment Works, manufacturers of Manitowoc upright freezers.

In making the announcement, Erle Brown, Manitowoc sales coordinator, acknowledged that export to foreign countries may be hindered somewhat by shortage of dollars abroad. However, both he and Hans Neuert, president of the export firm, know that there are a number of foreign markets open to freezer importation, and that they will provide an interesting and challenging sales potential for Manitowoc.

The export firm operates in European countries and South America. Neuert is at present traveling in southern Europe, introducing the Manitowoc line. The firm has been in operation since 1945. Previous to that, the partners Hans Neuert and O. N. Wilton were export managers of Bell & Howell Co.

### Omaha Dealer To Construct \$105,000 Store, Warehouse

OMAHA, Neb.—Miller Electric Co., appliance dealer, has secured a city building permit to construct a \$105,000 store at 2501 St. Mary's Ave. The one-story-and-basement concrete-and-brick building is scheduled for completion about January 1954, with Rorick Construction Co. of Omaha holding the building contract. Salesroom and offices will be air conditioned.

The Miller Co., which has a store at 415 South 18th St., said the new building will house a warehouse and company trucks in the basement, and appliance sales floor and offices on first floor. Additional space will be rented.

### Universal Major Elec To Pay on Debentures

LIMA, Ohio—Universal Major Elec Appliances, Inc. will make its third consecutive semiannual interest payment of 3% to holders of its 20-year 6% income debentures dated Feb. 1, 1952, and due Jan. 31, 1972, Morton L. Clark, president, announced recently.

The payment will be made to holders on record as of July 20, 1953.

### New England Equipment Distributes Sturtevant Line

BOSTON — New England Equipment Co. of Lewiston, Me., has been awarded a franchise as distributor for Westinghouse self-contained air conditioning equipment. The announcement was made by W. B. Cott, air conditioning sales manager of the Westinghouse Electric Corp.'s Sturtevant Div.

Headed by Nikitas Kesaris, the New England Equipment Co. has been associated with the ventilating and air conditioning business in the Lewistown area since 1937. It also handles a complete line of restaurant and bowling alley equipment.

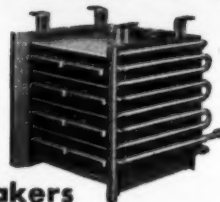
### Buy Peerless FOR PERFORMANCE

Faster-

Freeze

Finned

Cube Makers



The PEERLESS Finned Faster-Freeze Cube Maker provides both refrigeration and rapid ice-cube manufacture from a single, balance, compact unit. Its fin coils are standard PEERLESS coils with nonsoldered return bends... the ice-cube maker is standard PEERLESS all-aluminum construction. Easy installation and trouble-free operation are outstanding features; these Finned Cube Makers are available with either copper or aluminum tubing, permitting choice of refrigerants. Plain type cube makers also available. Sizes, capacities for all requirements. Designed to meet government specifications. Write for details.

### Peerless of America, Inc.

1501 No. Magnolia Avenue  
Chicago 22, Illinois, U.S.A.

### FREE! WRITE NOW FOR OUR NEW BIG EQUIPMENT CATALOGUE!!

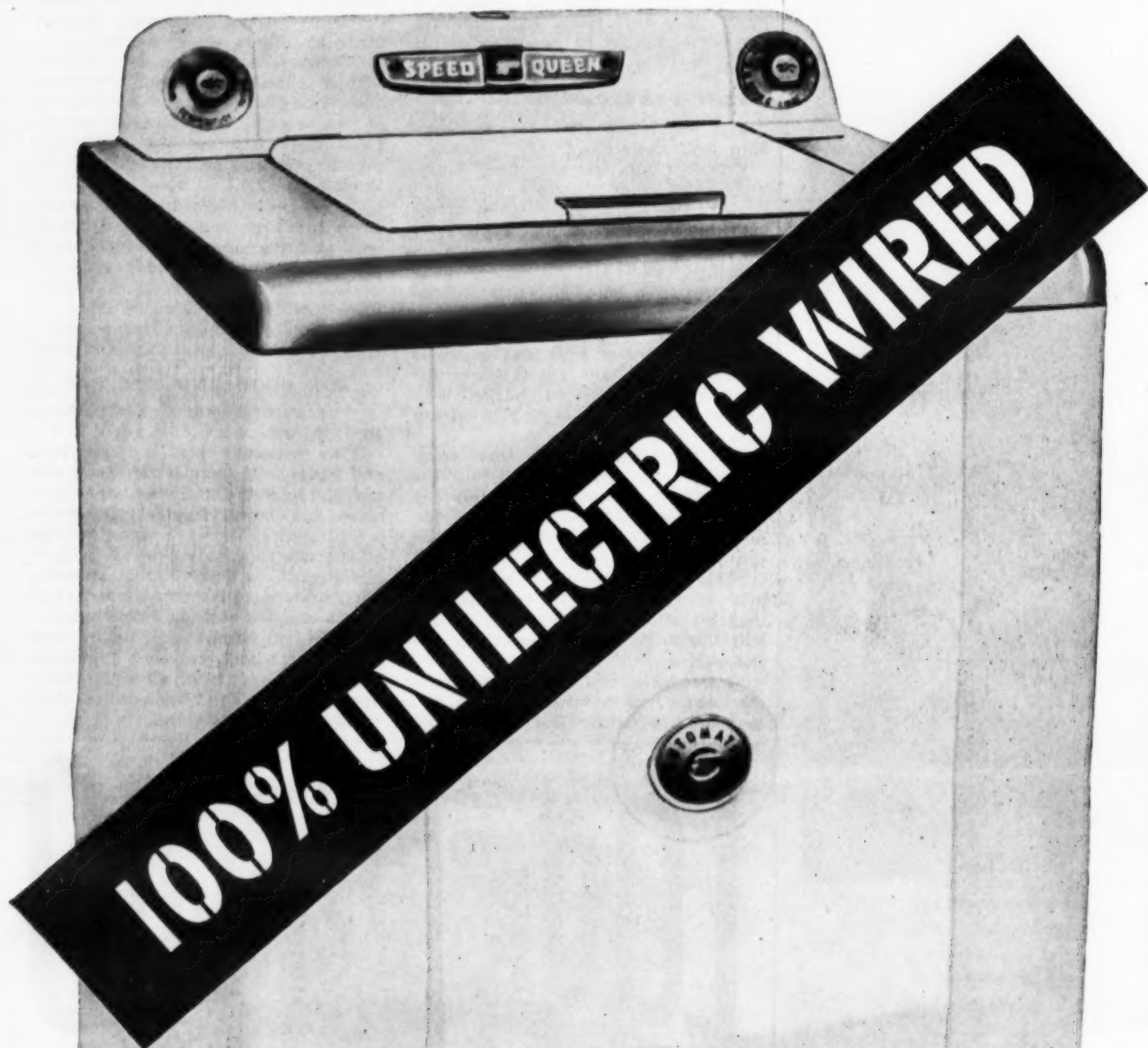
HUNDREDS OF ITEMS...

- BEER & SODA SYSTEMS
- WALK-IN BOXES
- REACH-IN BOXES
- DAIRY & BEVERAGE
- WALL CASES
- FREEZERS, Upright, Chest
- STAINLESS STEEL EQUIPMENT
- KITCHEN & TAVERN SINKS
- BOTTLE COOLERS
- ICE CUBE MAKERS
- AIR CONDITIONING

GET THE HABIT, IT WILL PAY TO CALL...

FRIGITEMP CORP.

931 BERGEN ST. BROOKLYN, N. Y. MAIN 2-9093



### SPEED QUEEN

This beautiful new Speed Queen Automatic Washer is packed with advanced new features. Backed by 45 years of experience in washing machine manufacture, Speed Queen engineers know the importance of dependable wiring. Their choice is Unielectric, like that of over 150 other leading electric and electronic product manufacturers.

It will pay you to investigate

**UNIELECTRIC WIRING SYSTEMS**  
Manufactured by  
**UNITED MANUFACTURING & SERVICE COMPANY**  
411 SOUTH 6th STREET • MILWAUKEE 4, WISCONSIN

**Get it!**  
**HARRY ALTER'S**  
SPRING and SUMMER... No. 158  
**DEPENDABOOK**

Illustrates, Describes, Prices  
Over 9,000 REFRIGERATION  
Television, Radio, Heating,  
Electric Motor, Air Conditioning  
PARTS and Supplies

Yes, get it and save money!

Write Now to  
WHOLESALE ONLY  
**The HARRY ALTER CO. Inc.**  
1728 S. Michigan Ave. Chicago 16, Ill. • 134 Lafayette St. New York 13, N. Y.  
HARRY ALTER gives you snappy service!



## What's New

When requesting further information on new products, please use "Information Center" form.



### Flexible Refrigeration Available In Food Case

KEY NO. C-740

CHICAGO—A food merchandising case that offers a variety of refrigeration arrangements has been introduced by Leitner Equipment Co. here.

Called the "Visicold," it can be obtained with both top and base sections refrigerated, with base section only refrigerated, or with all but the upper display section refrigerated.

A blower cooling system is incorporated in the lower section.

Visicold is a free-standing unit of electrically welded all steel construction with polished stainless steel exterior. High density Fiberglas insulation is used, and refrigerated base has polystyrene door liners that will not transfer food taste or odor. They will also not chip, break, or collect condensation.

Gaskets are grease-proof neoprene. Door jambs are moisture-proof. Display section has roller-bearing double glass sliding doors and inclined mirrors to attractively show food on shelves.

Ends on the base are available unfinished for multiple unit installation.

### Hoover Announces New 'Holiday' Vacuum Cleaner



KEY NO. C-741

NORTH CANTON, Ohio—A new streamlined, electric cleaner called the "Holiday" has been announced by the Hoover Co.

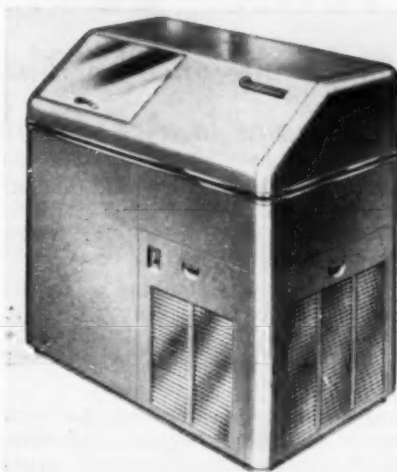
The cleaner, styled by Henry Dreyfuss, noted industrial designer, has a rectangular shell for easier and more compact storage. A baffle at one end cuts operating noise, so the operator can listen to her radio or TV while using it.

It employs a large-volume disposable paper dirt-bag, which can be easily installed or removed. It is also equipped with a permanent cloth dirt-bag, which may be used alone if desired.

The unit, which weighs 14½ lbs., has side and end handles for horizontal or vertical carrying, lightweight Compoflex hose, and step-on type of switch at the rear of the top carrying handle. It is finished in gray enamel with maroon end covers. Maroon cord is 18 ft. long, rubber covered.

Cleaning tools include the hose, two extension tubes, crevice tool, run nozzle, floor brush, furniture nozzle, and dusting brush. All have friction-type joints. It will retail for \$79.95.

### Scotsman Ice Cuber Makes 2,800 Solid Cubes Daily



KEY NO. C-742

ALBERT LEA, Minn.—A new automatic ice cuber that will produce up to 225 lbs. of solid cubes per day

(2,800 cubes) has been introduced by the American Gas Machine Co. here.

Known as the "Scotsman Super Cuber" model SC-200, the unit uses fresh water for every freezing cycle. Surplus water is automatically drained with every cycle, the company said. It claims that 3½ out of every 4 qts. of water is used in actual service.

The cuber stands 39 in. high, is 42 in. long and 24 in. wide. Its stainless steel storage compartment holds 125 lbs. of cubes normally, 150 lbs. maximum. The machine automatically turns itself off and on.

The refrigerating unit is a heavy duty hermetically sealed ½-hp. unit using "Freon-12." It operates on 115 volt, single phase, 60-cycle current.

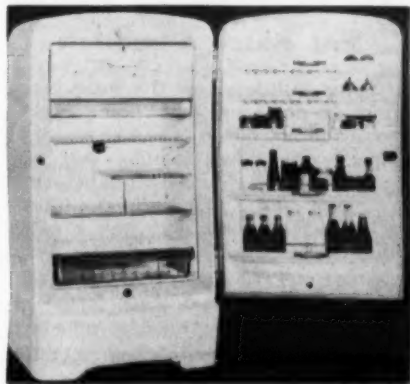
Only plumbing connections required are a ¼-in. water inlet and ¾-in. drain outlet. The cuber is said to operate on any water system.

### Crosley Adds 11-Cu. Ft Refrigerator to Line

KEY NO. C-743

CINCINNATI—A new 11-cu. ft. refrigerator with a suggested list price of \$349.95 will be shipped to dealers and distributors this month, the Crosley Div. of Avco Mfg. Corp. announced recently.

Known as the model SE-11, the unit features five deep shelves in the door, a butter compartment, full width sealed crisper, adjustable interior shelves, a 50-lb. across-the-top freezer, and "Sea-Mist" color styling in the interior. Crosley officials consider the new model particularly suited for department store selling.



### Sectional Cooler Has Standard 28½-In. Panel

KEY NO. C-744

INDIANAPOLIS—Because of the standardization of 28½ in. wide side wall, top, and bottom panel sections, the Elliott-Williams line of walk-in coolers and freezers is available in an almost unlimited number of sizes, the Elliott-Williams Co. here announced recently.

Smallest size is 5 ft. 8 in. by 5 ft. 8 in., the company said. The units are available as freezers, normal temperature coolers, or combinations.

Normal temperature coolers are insulated with 5 in. of semi-rigid Fiberglass while freezers have 7 in.

All cooler and freezer door sections occupy the same space as two standard 28½-in. wall sections. This means the door sections can be placed anywhere around the four sides of the box, the company said. Reach-in doors occupy only a single panel. Panel lengths vary from 6 ft. 7½ in. on up.

## Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

### What's New or Current Literature Available

Key No. ....	Key No. ....
Key No. ....	Key No. ....
Key No. ....	Key No. ....
Key No. ....	Key No. ....

Products Advertised  
(list name, page, and issue date)

(PLEASE PRINT PLAINLY)

Name ..... Title .....  
Company .....  
Street .....  
City ..... Zone ..... State .....  
Type of Business .....

MAIL THIS FORM TO  
AIR CONDITIONING & REFRIGERATION NEWS  
Reader Service Dept.  
450 W. FORT ST. DETROIT 26, MICHIGAN

## NOW...the all new FOUNTAINETTE SERIES

by  
**Everfrost**



MODEL EF-20  
SCEWC  
20 gal. cap.  
5 ft. long

MODEL EF-30  
SCEWC  
30 gal. cap.  
6 ft. long

MODEL EF-40  
SCEWC  
40 gal. cap.  
7 ft. long

At last the famous EVERFROST FOUNTAINETTE is available in a complete range of sizes to fit your every need. Fully self-contained, including compressor and carbonator, the Fountainette Series offers a packaged unit ready for immediate operation in a minimum floor space. The Fountainette Series with ice cream capacities of 20, 30 and 40 gallons, has three individual temperature controls providing correct temperatures for 1) Cold storage compartment and syrup bank 2) Plain and carbonated water cooling 3) Ice cream compartments.

Write today for detailed information on the Fountainette Series

EVERFROST SALES, INC.  
14815 S. BROADWAY  
GARDENA, CALIFORNIA

### Some features of EVERFROST—"America's Choice in Fountains"



COOLER-CARBONATOR  
The Everfrost Refrigerated Carbonator and Water Cooler assures a plentiful supply of perfectly chilled plain and carbonated water.



DRIPLESS LIDS  
Constructed entirely of stainless steel, all ice cream compartment lids are hermetically sealed, moisture-proof and designed to eliminate drippage into the ice cream compartment.



SERIES 90 PUMP  
Designed and developed by Everfrost engineering specifically for soda fountain and drink dispensers, the Series 90 Pump provides years of dependable, economical performance.

EVERFROST MANUFACTURES A COMPLETE LINE OF SODA FOUNTAIN AND DRINK DISPENSING EQUIPMENT



## Air-Conditioning Design Engineer

York-Shipley has an unusual opportunity for a designer of air-conditioning equipment to be responsible for the design, testing and application of home cooling units. This is an unusual opportunity for the proper man to become associated with a new branch of our business. Applicants should be graduate mechanical engineers with experience in the design of cooling equipment. Please contact:

C. H. NEIMAN, JR., V.P.  
In charge Engineering  
York-Shipley, Inc.,  
York, Pennsylvania

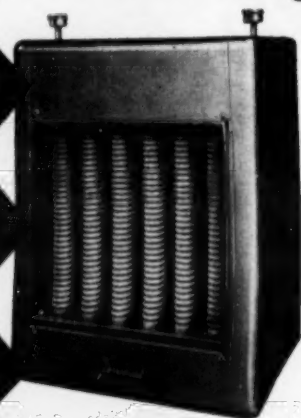
**Redmond**  
**MICROMOTORS**  
One of largest stocks  
outside factory!  
FACTORY DISTRIBUTORS  
**CYCLO-FREEZE CORP.**  
MARVIN L. "FERDIE" FERGESTAD  
2120 S. Lyndale, Dept. A, Mpls. 5, Minn.

It's as simple as  
**ABC**  
...to combine  
**Janitrol** <sup>GAS</sup> heating  
with your cooling!

**A** PPLICABLE to some duct work used for new or existing summer air conditioning systems.

**B** EST method of conserving space. Janitrol blowerless units fit right into the common duct.

**C** OMPETITIVE because of simpler installation, lower initial and operating costs, high efficiency and long life.



Here is a proved and practical way to sell and profit from year round conditioning instead of getting only part of the job.

Instead of bidding against your competitors on straight summer conditioning jobs for commercial and industrial installations, you offer a complete system for both heating and cooling. You also increase your sales potential by securing heating installations during what would be normally your slower months.

Janitrol's constant research and engineering have resulted in an ideal unit especially designed for combined systems. As an example of this, all heat exchanger tube assemblies of Janitrol Duct Units are coated inside and out with a special ceramic finish for positive protection against corrosion to assure longer life.

THREE JANITROL DUCT UNITS provide comfort during the heating season in the Birmingham, Alabama church shown below.



WRITE for specifications on Janitrol Duct Furnaces, Bulletin DF-53.

SURFACE COMBUSTION CORPORATION • TOLEDO 1, OHIO

ALSO MAKERS OF SURFACE INDUSTRIAL FURNACES • KATHAR HUMIDITY CONDITIONING

## Progress In Home Cooling

### ASRE Conference on Residential Air Conditioning Cites Gains In Art, Goals Still Facing Industry

LAKE PLACID, N. Y. — What might be termed a "progress report" on the advances made in year-round residential air conditioning and a definition of some goals still ahead were made during the 40th semi-annual meeting of the American Society of Refrigerating Engineers at the Lake Placid club here.

The Packaged Air Conditioner Conference, chairmanned by Justin Neuhoff of G-E and Ralph Gonzalez of Airtemp, consisted of seven talks devoted to various phases of residential air conditioning, including a builder's view, design problems, controls, water conservation, and a packaged heat pump.

Summaries of these talks follow.

#### Air Conditioning Basic, Not Sales Gimmick

"Some builders feel the need for a gimmick to keep new home starts above the 500,000 to 600,000 required annually by new families, but our houses must have basic quality, not gimmicks, and I think air conditioning is a basic need, not just a sales gimmick."

So commented E. H. Spiegel, president of the National Association of Home Builders, as the first speaker.

Spiegel complimented the industry for the progress made during the past two years in reducing the cost and

size of residential air conditioning, but he urged further reduction in initial cost and asked for more definite data on operating costs.

"Our goal is to continue to reduce initial cost to the point where it won't mean more than a 3% increase in the mechanical cost of a small home," he said.

At present, he explained, the total cost of plumbing, heating, and electrical installations in a small home amounts to 19% of its total cost.

Regarding data on operating costs, "the industry hasn't made these facts too well known," Spiegel complained. "I've gotten guesses that ranged all the way from \$5 to \$35 a month."

"If these operating costs are known, your industry has to do a better job of getting the information to us and the home buyers."

#### Design Problems In Combination Units

"The ever-increasing amount of air conditioning in public places has sharpened the desire for summer air conditioning in the home," declared R. M. Thompson of Bryant Heater in discussing "Design Considerations in Combining Summer and Winter Residential Air Conditioners."

"But since the winter air conditioning system is already established, the big problem now is designing the summer system and adapting it for use with winter systems."

"A low noise level is one of the most important factors in designing systems for the home. This means," Thompson said, "that we need hermetic systems and large, low speed blowers."

"Service must be kept to a minimum, less than that considered satisfactory for commercial air conditioning, and as for size, the air conditioner should be built for the home, not the home for the air conditioner."

Reviewing the improvements and refinements in winter air conditioning that have been developed during recent years, Thompson emphasized, "the trend is definitely toward forced warm air. In 1952 as many of these systems were sold as all other types of heating systems combined. This helps in summer cooling developments."

He also reminded the group that there are three basic types of forced warm furnaces. The first is designed for basement installation; the second is a floor type furnace for basement-less homes; the third, for attic installation.

Other design considerations, Thompson said, include the ratio of cooling to heating capacity.

"Flexibility of these ratios is desirable. Over-sizing of heating equipment is not the best answer, and

varying air delivery also presents problems.

"In homes with wet heat, space coolers may be necessary if space for ductwork is not available," Thompson also commented.

#### Requirements of Systems For Existing Homes

Air conditioning for existing homes "must have enough capacity, deliver enough air, and have good air distribution," summarized W. B. Cooper of American Radiator and Standard Sanitary Corp.

Discussing "Installation of Packaged Air Conditioning in Modernizing Existing Homes," Cooper made the point that "the biggest single market potential for air conditioning is in the residential field. But we have to see that the jobs installed are good jobs that will help sell more air conditioning."

"The manufacturer has the responsibility of designing good equipment and supplying installation data. The engineer has to work with the manufacturer to keep cost down and quality up."

"The contractor has many responsibilities—proper installation, service, etc.—but we manufacturers and engineers are responsible for what the contractor does," Cooper declared. "We have to help the contractor install good jobs. It is in the proper installation that lies the quality of the job and future success of residential air conditioning."

#### MUST OBSERVE DETAILS

"In making surveys of existing homes, for example, the contractor has to be closely observant of details. Air conditioning of existing homes requires close examination of the existing heating plant. If it doesn't heat properly, the chances are it won't cool properly."

Cooper emphasized that "plenty of imagination" must be used in making such surveys.

With the use of slides, Cooper showed various arrangements by which cooling units could be installed with existing forced warm air furnaces to provide summer air conditioning.

"Some codes," he said, "require the cooling unit to be installed on the discharge side of the furnace. The danger of putting the cooling unit ahead of the furnace depends on the heating element, actually. We have found some rust on the heating element in such installations, but it wasn't serious enough to cause damage."

He also commented that "it is common practice to utilize a separate fan for cooling. Furnace fan motors, generally, don't have enough additional power and you can't speed them up

enough for cooling. With an add-on unit, however, larger motors are usually installed to speed up the existing fan."

"There are also other advantages in using separate, self-contained units for heating and cooling," Cooper continued. "This permits a wider range of combinations which will meet more different job requirements."

Importance of having diffusing type air grilles was also cited by Cooper, but he indicated that their location was not of prime importance.

"These can be floor, ceiling, high side wall, etc.," he declared.

#### 'Universal' Controls Would Cut Costs

"It has been brought out that residential air conditioning systems must be low in cost, and mass production of control circuits will help lower costs," said F. Y. Carter of Detroit Controls Corp.

"There has been a tendency of manufacturers to each push certain types of controls, but we are attempting to come up with a universal, simple control system that most manufacturers could use."

"A satisfied customer is the best advertisement of air conditioning, and it's the housewife, not the husband, we have to satisfy."

According to Carter, there are six basic requirements of a control system for residential air conditioning:

1. It must control the room temperature during the heating season.
2. It must control the minimum room temperature during cooling season.
3. Change-over from heating to cooling must be provided at the thermostat.
4. Selection control for intermittent fan operation must be provided at the thermostat.
5. Control of fan operation for ventilation only is necessary.
6. There must be some semblance of humidity control.

#### RETAIN BASIC CONTROLS

There are also, Carter pointed out, certain basic controls for a heating system that will have to be retained in a year-round system control set-up. These include—for a gas-burning system—a thermostat, limit control, transformer, safety pilot, gas valve, and fan control. Similar control devices are required for other types of fuel.

Basically, there are three types of add-on refrigeration systems for residential cooling, as listed by Carter:

1. The add-on system using a bypass damper to give some humidity control.
2. A split coil with two expansion devices, a solenoid on one half of the coil to provide better humidity control.
3. Two small refrigeration systems controlled by a two-stage thermostat.

"On the refrigeration system itself we have the usual safety controls such as high pressure cut-outs, etc."

(Concluded on next page)

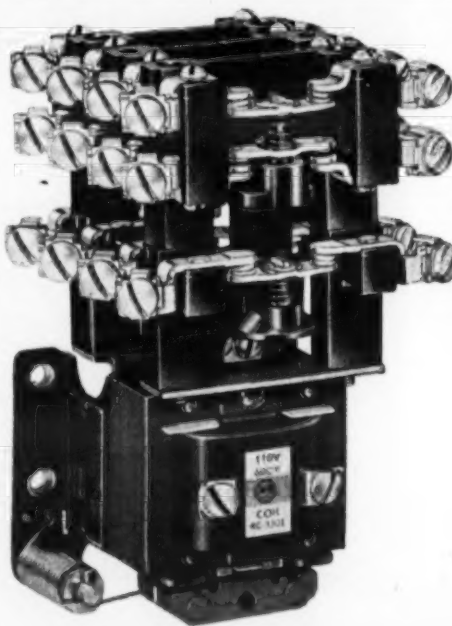
## OVER 300 TYPES of RELAYS

### Solve Your Special Relay Problems with These Standard A-B Relays

Bulletin 700 Relays are small contactors built to the same high standards of ruggedness and performance as the regular Allen-Bradley line of motor controls. Over 300 different types are listed as standard, from 1 to 12 poles, with normally open or normally closed contacts. If you are developing a machine or installation requiring small but dependable magnetic relays, specify Bulletin 700 for a-c applications and Bulletin 200 for d-c applications.

Allen-Bradley Co., 1313 South First Street  
Milwaukee 4, Wisconsin

ALLEN-BRADLEY MOTOR CONTROLS for Air Conditioning and Refrigeration • Manual and automatic across-the-line starters • Compression type velvet smooth starters • Pressure and temperature switches and controls • Relays and contactors from 1 to 8 poles • Push buttons and selector switches.



**ALLEN-BRADLEY**  
**SOLENOID MOTOR CONTROL**

QUALITY





## Water as Factor In Home Cooling--

(Concluded from preceding page)

The mass-produced control panel we're aiming for must be able to operate efficiently on any of these combinations of systems," Carter declared.

"In many cases, the low voltage control cable may have eight to 10 wires running to the thermostat location," he warned.

Carter pointed out, however, that a mass-produced control system may have provision for certain controls and equipment that won't be used by all manufacturers of residential air conditioning.

"It would be a simple matter for these manufacturers to use the same control. They would merely omit connections at certain terminals," he explained.

### How Airtemp Device Eliminates Water Use

"The problem of water consumption has been a serious one for the packaged air conditioning industry," agreed J. D. Lovely of Chrysler Airtemp, presenting a discussion prepared by Paul Wyckoff of Airtemp.

"As water restrictions are imposed by various municipalities and as the residential air conditioning market expands, it is particularly important that all practical means of eliminating water consumption on packaged air conditioners be explored.

"Recently Chrysler Airtemp announced the production of a sealed water saver which can be applied to a previously installed water-cooled packaged air conditioning unit, in effect, converting it to an air-cooled unit. It eliminates water consumption, does not require breaking into the refrigerant circuit, and does not involve maintenance arising from condenser liming or corrosion of metal surfaces exposed to water sprays, etc.," Lovely said.

### DESIGN OF WATER SAVER

"This sealed water saver consists of a remotely located package having a water-to-air heat exchanger of the fin and tube type with outside air going over the external surface and water circulating through the inside. It is connected by means of water lines to the standard packaged air conditioner so that water flows through the packaged unit condenser and sealed water saver heat exchanger in series. In operation it gives results similar to a remotely located air-cooled condenser but does not require the running of refrigerant lines," Lovely explained.

He cited nine features which are claimed for the water saver:

1. No water consumption whatever is required.
2. The hermetic refrigerant circuit is maintained.
3. Appearance is attractive.
4. Installation is simple, requiring running of water lines between unit and water saver.
5. There is little corrosion of surface, and liming is eliminated.
6. Water saver is quiet in operation.
7. Can be adapted to reheat type of humidity control.
8. Permits converting standard water-cooled package units to air cooling without change.
9. Summer-winter change-over completely automatic, use of anti-freeze solution eliminated need for drainage of water in winter.

"It is very important that the sealed water saver be applied only with cooling units which have been designed to be used with it," Lovely emphasized. "It is not recommended and should not be used for all packaged units of its size in the field.

"The reason for this is that, as in all air-cooled applications, the compressor discharge pressures run considerably higher than they do with city water installations or even with a cooling tower installation. This has an important effect on approvals of the cooling unit condenser as a pressure vessel and this must be taken into consideration when the sealed water saver and packaged units are designed.

"In addition, the compressor motor and its overload protection must be considered and adequately designed to take the higher loads encountered with air cooling," he said. "It has been found that this represents very little cost penalty to the package cooling unit and the possibility of adding the sealed water saver is well worth the redesign required. The unit is designed to remain in operation even when the ambient temperature is 115° F."

Discussing the question of cost, Lovely said, "Economic justification for the use of the sealed water saver or other air-cooled units depends upon the cost of water and electricity in the area, the reluctance of customers to use water at any price, local restrictions on the use of water because of inadequate water supplies or sewers, and the customer's desire for maintenance-free operation.

"In some cases it will be less expensive or otherwise desirable to use direct water cooling or a cooling tower or evaporative condenser instead of the sealed water saver. In most cases, it is highly advantageous to use the sealed water saver.

"As regards operating cost comparison with a cooling tower, where average outside temperatures during the cooling season are 100° F. or below and electric rates are 2¢/kwh. or below, the sealed water saver is economically attractive as compared to a typical cooling tower installation, considering maintenance costs involved."

### 'Terrific Problem' Seen In Water Conservation

"If the saturation curve of residential air conditioning goes up as some predict, it will pose a terrific water conservation problem," warned R. E. Holmes of Worthington Corp.

"There are already some limitations on water use and/or sewage disposal in various parts of the country. Generally," he said, "water department authorities fall into two groups. One group wants to supply water for all needs. The other says water is a natural resource that must be conserved.

"I think the second group is more nearly right.

"We are reasonably certain that water restrictions are coming, so we must be able to tell the builder what water-conservation methods are available," Holmes declared.

He listed five possible methods:

1. Air-cooled condenser.
2. Fan-coil unit to cool condenser water.
3. Cooling tower.
4. Evaporative condenser.
5. Water-cooled condenser operating at high condensing temperature with a two-stage compressor.

"For residential use I'd favor the air-cooled condenser," Holmes said. "If manufacturers would include the air-cooled condenser in the package at the factory, it would be a great step forward."

An air-cooled condenser installed on the side or top of the packaged unit "like a bubble" with provision for proper air supply "would be the best answer to the problem," he said.

"In some areas cooling towers are accepted as a necessary blot on the backyard scene as garbage cans and clothes lines once were," Holmes told the ASRE conference.

An interesting scheme for water conservation that could be used in "brand new housing developments remote from cities" where water lines may have to be brought some distance was proposed by Holmes, who said that "during the three summer months residential air conditioning using water-cooled condensers takes 10 times as much water per family."

The suggestion offered would require the building contractor to install separate water supply and return loops throughout the development for the express use of air conditioning. Water from the air conditioners would be piped into a spray pond in a park area of the development and thus be cooled and returned to the air conditioners.

"Water demands could be cut to less than a tenth of normal with such a system," Holmes declared.

### G-E Heat Pump Sales 'Most Encouraging'

"Despite its cost being higher than conventional combination heating and cooling units, sales of the G-E heat pump have been most encouraging," declared D. W. Lynch of General Electric Co., reporting on his company's first-year production and sales experience with its packaged air-to-air unit.

"It was first planned primarily for the South, but now we find we can use it in the North as well, where houses are more tightly constructed. The temperatures of the South, we found, are similar to those of the coastal areas farther north."

More commercial applications than anticipated were found in the North, where "there is a better heating-to-cooling ratio," Lynch also indicated. "Apparently," he said, "many people like all-electric living."

He also emphasized the point that "the heat pump increases the kilowatt consumption in the home by three to four times. This increases the sales potential of electric ranges, water heaters, and dryers."

For every 1,000 heat pumps sold in an area, there is a potential \$500,000 market for these three appliances over their normal potential, according to Lynch.

With respect to applications of the heat pump, Lynch said G-E was trying to avoid "pyramiding of safety factors" which is the usual practice in calculating the heat load. This involves using a slightly higher winter design temperature than normally

employed and a closer calculation of heat losses.

"We have found less use of resistance heating than we anticipated, due largely to the heat-holding capacity of the structure," he reported.

(The 3-hp. heat pump has 6 kw. capacity of resistance heating, the 5-hp. unit, 10 kw.)

There is no simple way to estimate operating costs of the heat pump because several factors must be known, Lynch said, but he did comment: "It's turned out that our actual operating costs in many instances were less than we had calculated."

A problem in defrosting the unit has turned up in some instances, Lynch told the conference.

"In some areas where high humidity conditions occur when outdoor temperatures are between 32° and 40° F., the unit has defrosted as often as every 20 minutes."

The G-E unit senses frost on the outside coil during heating by means of pressure drop across the coil. Reverse cycle provides heat for defrosting.

### MORE CAPACITY NEEDED

Admitting that "the heat pump must have more capacity at lower outside temperatures," Lynch also stressed the point that "there needs to be a better appreciation of the effect of a heat pump on a utility's system. The annual load factor is not the best criterion," he asserted.

The load on both the primary and secondary power distribution system of the utility have to be considered, according to Lynch, who stated that the heat pump may give better load distribution over the utility's secondary system than presently believed.

As for the future of the heat pump,

Lynch said an important factor will be gaining "more knowledge of the extremes of weather."

He implied that this could lead to changes in design temperatures that would benefit the heat pump.

## BEAT THE HEAT

with easily installed

### ROOF COOLING

Most cooling per \$,  
most profit per \$!

Ask for our literature, no obligation.

### RUPPRIGHT'S ROTARY ROOF COOLER

Box 6795, Los Angeles 22, Cal.

## Westinghouse Air Conditioning

### THE MOST COMPLETE LINE IN THE INDUSTRY

- Self-contained UNITAIRE® from 2 to 15 hp.
- Central plant UNITAIRE from 15 to 25 hp.
- Hermetically-sealed compressors from 2 to 100 hp.
- Water-cooled and evaporative condensers and water coolers in matching ratings.
- Complete line of coils, fans, air handling units and electronic air cleaners.

YOU CAN BE SURE...IF IT'S  
**Westinghouse**

**AIR CONDITIONING**

J-80286 Hyde Park, Boston 36, Massachusetts

# Small shelf—Big stock...

## WITH LEHIGH'S GREATER INTERCHANGEABLE PARTS



Or, to put it another way, a \$25 investment allows a Lehigh BLUE-COLD wholesaler to carry Seals, Valve Plates and Gaskets for the entire BLUE-COLD line from 1/4 H.P. thru 5 H.P. You must agree that this is not only a reflection of good engineering but a many sided advantage. Investment is smaller. Inventory is smaller. Less space is required. Turnover is more rapid (and percentage of profit!) Unit servicing is much easier and convenient.

**Everybody wins!**

**THREE BASIC COMPRESSORS MAKE OVER 200 MODELS**  
with capacities from 870 to 70,000 BTU/Hr.  
with over 50 generally interchangeable parts

A postcard will bring latest PARTS CATALOG or see your nearest Lehigh BLUE-COLD wholesaler.




**Lehigh BLUE-COLD CONDENSING UNITS and SYSTEMS**

Lehigh Manufacturing Co., Lancaster, Pa.  
Division of Lehigh Foundries, Inc.

WM-10F-1 H.P. Water Cooled Unit

Export Dept. — 13 E. 40th St., New York 16, N. Y.

Manufacturers of Malleable and Grey Iron Castings • Refrigerating Equipment • Air Valves • Automatic Vending Machines



## Good Contact Between Tubes and Lath Is Prerequisite to Good Heat Transfer

DENVER — Importance of having good contact between the tubes and the lath and plaster in heating panels was brought out in a report of studies of thermal characteristics of plaster panels presented at the semiannual meeting of the American Society of Heating and Ventilating Engineers here.

This factor was illustrated by tests of two panels in which the tubes located above metal lath were wired to the lath at 8-in. intervals along each tube.

The plaster was applied by an experienced craftsman, and the embedding of tubes was judged by observers to be equal to field practice in one panel and superior in the other.

Back plaster was applied over the tubes in the average panel, which then showed performance for the 8-in. tube spacing equal to that of 6-in. spacing without back plastering, it was reported.

The paper was prepared at the society's research laboratory in Cleveland by L. F. Schutrum, research fellow, and C. M. Humphreys, senior engineer. The investigation was made under the advisory guidance of the Technical Advisory Committee on Panel Heating and Cooling as a part of the society's over-all research program, organized to develop design data for panel heating and cooling systems.

The authors stressed the fact that the results of these studies will permit the design of a heating panel when the required heat output and the panel surface temperature have been determined.

The application between these two variables must be established for each separate application. Data on the relationship between panel output and panel surface temperature are now being developed at the ASHVE Research Laboratory in further studies.



## Another Leading Motor Repair Shop Finds KLIXON Protectors Prevent Motor Burnouts

WORCESTER, MASS.: Mr. F. P. Sweeney, assistant manager of A. L. Brown & Associates, authorized service station for 10 leading motor makes, distributor, and representative for Browning V-belt drives, recommends KLIXON Protectors for motor burnout protection.

"We find KLIXON Protectors prevent complete motor burnouts. Save customers costly repairs, and permit us to render faster, more dependable service. We recommend them highly!"



Manual Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

Automatic Reset

### KLIXON Protectors Build Customer Goodwill by Preventing Major Repair Costs

The KLIXON Protectors, illustrated, are built into the motor by the motor manufacturer. In such equipment as refrigerators, oil burners, washing machines, etc., they keep motors working by preventing burnouts. If you would like increased customer preference, reduced service calls and minimized repairs and replacements, it will pay you well to ask for equipment with KLIXON Protectors.

**KLIXON**

**SPENCER THERMOSTAT**  
Division of Metals & Controls Corp.  
2407 FOREST ST., ATTLEBORO, MASS.

## Refrigeration Problems

and their solution

by Paul Reed

For Service and Installation Engineers



Paul Reed

### Carbon Monoxide

All of our common fuels—coal, oil, kerosene, gasoline, and natural gas—are composed largely of carbon and hydrogen in varying proportions and combinations. What we call combustion or burning is the very rapid union of oxygen from the air with the carbon and hydrogen. The union releases very large amounts of heat energy.

The fuels change appearance and form. When the oxygen (O) combines with the carbon (C) and the hydrogen (H), the two chief products that are formed are carbon dioxide (CO<sub>2</sub>) consisting of one atom of carbon and two atoms of oxygen, and water (H<sub>2</sub>O) consisting of two atoms of hydrogen and one atom of oxygen.

If there is any sulphur in the fuel (particularly in coal) small, but quite odoriferous, quantities of sulphur dioxide (SO<sub>2</sub>) are also formed. The ashes that remain consist of materials in the fuel that will not burn or vaporize, such as iron and other metals, that stay in solid form.

Another gas that is also formed, although happily it is usually formed in small quantities, is carbon monoxide (CO) consisting of one atom of carbon and one atom of oxygen. One of the most common sources of carbon monoxide is the exhaust gas from internal combustion engines used in automobiles, trucks, tractors, etc., in which combustion is often not quite complete.

#### CO<sub>2</sub> AND CO SOUND SIMILAR BUT ACT DIFFERENTLY

Thus, carbon dioxide (CO<sub>2</sub>) and carbon monoxide (CO) sound very much alike, and in fact differ chemically by only one atom of oxygen in the molecule.

But in most other respects, carbon dioxide and carbon monoxide are quite different. Carbon dioxide will not support animal life, for the oxygen it contains is not in free form as it is in the air, but CO<sub>2</sub> is not poisonous in the sense in which we commonly use the word "poisonous."

Rooms in which the air contains very much carbon dioxide should be ventilated, for carbon dioxide cannot be breathed with impunity, although it is classified as non-toxic.

Carbon dioxide is useful in many ways. It appears many times in nature, such as the gas that causes bread to rise, the "head" on beer, etc., and it is used by plants in somewhat the same manner that animals use oxygen.

Artificially produced carbon dioxide has many industrial uses, and it is commonly known in the refrigeration industry as the gas in "carbonated" drinks, as a primary refrigerant (although rapidly declining in use for this purpose), and in solid form as "dry ice." Service engineers use it a great deal to blow out coils and for pressure testing.

#### CARBON MONOXIDE A DANGEROUS GAS

But its cousin, carbon monoxide, is quite a different story, for it is quite poisonous even in relatively small amounts. Just that difference of only one atom in the molecule, makes carbon monoxide dangerously different from carbon dioxide.

Carbon monoxide is the gas that is responsible for deaths in closed garages with the engine running, in fires in buildings, and in closed, parked automobiles with the motor running to provide heat in the winter. It is also the "black damp" in wells and poorly ventilated mines, into which it seeps from subterranean sources.

Like carbon dioxide, carbon monoxide is colorless, tasteless, and has no odor except in such concentrations that, if breathed, it would be quickly fatal.

Moreover, carbon monoxide gas has about the same density (weight per cubic foot) as ordinary air, so it does not easily "stratify" with the air. The old rule that carbon monoxide does not exist near the floor in a fire cannot always be relied on.

Unlike carbon dioxide, which is the active "smothering" agent in most

fire extinguishers, carbon monoxide is flammable and even explosive, although in such concentrations in the air that it would be highly toxic long before the mixture became flammable.

Since carbon monoxide is so difficult to detect, and since it is fatally dangerous even in comparatively small concentrations, a person may be overcome by carbon monoxide without being aware of it.

Therefore, the best protection against carbon monoxide poisoning is to avoid those conditions in which this deadly gas may be present.

Fortunately, it is not too difficult to predict those conditions, so that they may be avoided.

#### SYMPTOMS OF CARBON MONOXIDE POISONING

When carbon monoxide is breathed into the lungs, it is absorbed into the blood more easily than oxygen, so it prevents the blood from carrying the oxygen from the lungs to the body tissues.

Since the brain and the nervous system require more oxygen than other parts of the body, the brain and nerve tissues are the ones to suffer first from exposure to carbon monoxide.

The first symptoms of carbon monoxide poisoning are shortness of breath, headache, dizziness, an extremely tired feeling, and nausea.

Further exposure may cause loss of memory, dulling of the senses of sight and hearing, and inability to speak. Severe and prolonged exposure results in unconsciousness, paralysis, and death.

#### FIRST AID FOR CARBON MONOXIDE POISONING

First aid for those who have been overcome by carbon monoxide should consist of the following:

1. The patient should be moved from the contaminated atmosphere and kept comfortably warm.

(Warning—the rescuer should be extremely careful that he too is not

overcome before he can get the patient out. Deaths of those attempting to rescue persons from carbon monoxide atmospheres—such as wells—are quite common.)

2. Artificial respiration should be given if breathing has stopped, or is very weak or in gasps. Start artificial respiration as soon as possible.

3. Call a doctor, even if the patient revives. The aftereffects may be serious.

4. Oxygen should be given if it is available and there is someone skilled in administering it. Oxygen not only aids revival, but it tends to prevent the severe headache and muscular pains that often accompany carbon monoxide poisoning.

5. Keep patient warm and in a comfortable position.

6. As an aid to circulation, the patient's head may be placed slightly lower than his body.

Give him plenty of time to rest and recuperate.

Alcohol, drugs, or stimulants should not be given, as they are of little value, and may in fact do more harm than good.

(To Be Continued)

### Mueller Brass Builds New Warehouse In Los Angeles

LOS ANGELES — A new warehouse containing 22,000 sq. ft. of floor space has been constructed at 2313 E. 44th St. here by the Mueller Brass Co.

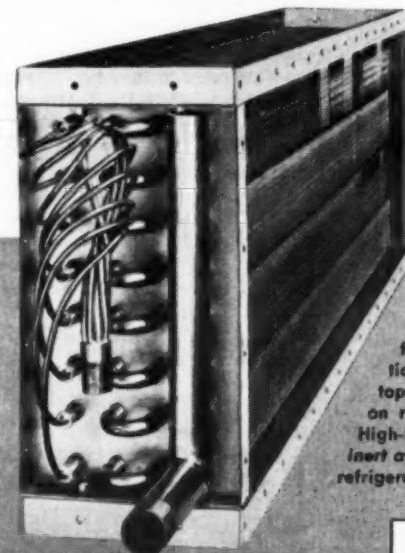
The building has adequate provision for customer parking and indoor dock level truck loading, according to J. K. Breakie, warehouse manager. The new warehouse will serve customers in southern California, southeastern Nevada, Arizona, and New Mexico.

T. A. Howard, Mueller Brass district sales manager, and G. M. Hunter, sales representative, will also have offices in the new location.

Throw out the fans!  
I want...

**Tenney**

Standard 4-Row Air-Conditioning Coils, AC4 Series



5 capacities in 11 popular sizes with F-12, F-22 refrigerants.

for stores, homes, and offices... where built-up systems are used with duct distribution.

1. 5/8" O. D. copper tubing. 2. "Face-Fin" of faceted-surface aluminum for greater heat transfer and dehumidification efficiency. 3. Heavy-gauge steel end, top, and bottom plates (aluminum available on request). 4. All copper suction headers. 5. High-temperature hard solder tube joints with inert atmosphere inside tubes for clean scale-free refrigerant passes.

Model No.	Nom. Tons	Finned Lgth.	Finned Hgt.	Dimensions A	B	C	Face Area	Refr. CFM.
ACA-2A	2	29"	7 1/2"	3 3/4"	1 1/2"	2"	1.51	750
ACA-2B	2	28"	11 1/2"	3 3/4"	1 1/2"	1 1/2"	1.54	750
ACA-3A	3	29"	11 1/2"	3 3/4"	1 1/2"	2"	2.27	1125
ACA-3B	3	22"	15"	3 3/4"	1"	1 1/2"	2.29	1125
ACA-5A	5	36"	15"	4"	1"	1 1/2"	3.71	1875

Complete range of models and sizes

ACA-7 1/2 A	7 1/2	43"	18 1/2"	4 1/4"	1 1/2"	1"	5.60	2800
ACA-7 1/2 B	7 1/2	36"	22 1/2"	4 1/4"	1 1/2"	1 1/2"	5.63	2800
ACA-10A	10	58"	18 1/2"	4 1/4"	1 1/2"	1 1/2"	7.54	3750
ACA-10B	10	48"	22 1/2"	4 1/4"	1 1/2"	1 1/2"	7.50	3750

It's NEW!—the ideal line of standardized direct-expansion coils. It's the one line that can be recommended, sold and installed with complete confidence, backed up by the sound engineering and quality construction that guarantee the best—when you specify TENNEY!



**Tenney**  
ENGINEERING, INC.

No matter what your refrigeration problem... there's a Tenney unit to solve it. Tell us yours and we'll show you how. Tenney Engineering, Inc., Dept. E 26 Ave. B, Newark, N. J.

Manufacturers of Automatic Temperature, Humidity, and Pressure Control Equipment



## Appliance Dealers Sold 40% of Freezers Bought Last Year, NEMA Survey Finds

NEW YORK CITY — Appliance dealers sold about 40% of all home freezers last year, a distribution report compiled recently by the National Electrical Manufacturers Association reveals.

The report broke down the percentage distribution of freezers, refrigerators, electric ranges, and water heaters by types of dealer for each year in the five-year period between 1948 and 1952.

The breakdown showed that, out of the 12 types of dealers listed, appliance dealers sold 39.8% of the home freezers, 34.6% of the ranges,

32.4% of the refrigerators, and 26.7% of the water heaters during 1952.

They sold more of these appliances than any other type of outlet, with the exception of water heaters, where plumbing and heating dealers accounted for 27.3% of the sales.

Noteworthy is the fact that the appliance dealer's share of home freezer sales was 5.2% greater in 1952 than in 1951, picking up this business mainly at the expense of farm implement and general country stores.

The percentage breakdown for each of the four appliances is as follows:

### FREEZERS Retail Distribution

	1952	1951	1950	1949
Department Stores	3.4	4.3	4.7	4.0
Furniture Stores	9.0	9.0	8.5	7.6
Appliance Stores	39.8	34.6	34.4	35.5
Utilities	3.0	3.3	3.1	3.1
Hardware Stores	6.3	7.3	8.0	7.2
Plumbing and Heating Stores	1.4	1.5	1.5	1.4
Farm Implements and General Country Stores	17.2	21.2	19.5	24.6
Lumber and Building Supplies	.5	.7	1.1	.8
Automotive—Parts and Filling Stations	5.1	5.7	5.7	5.5
Apartment House, Builders, Contractors, Govt.—Direct Sales	3.8	4.3	4.7	4.9
Jewelry and Music Stores	.7	.8	.7	.7
All Others—Drug, Fuel, Dairy, etc.	9.8	7.3	8.1	4.7

Source: NEMA

### REFRIGERATORS Retail Distribution

	1952	1951	1950	1949	1948
Department Stores	15.3	14.5	16.0	17.8	14.0
Furniture Stores	15.2	13.5	15.4	16.5	16.8
Appliance Stores	32.4	32.9	32.4	33.3	35.0
Utilities	2.7	2.8	3.4	3.1	4.6
Hardware Stores	5.1	5.6	6.1	6.5	6.6
Plumbing and Heating Stores	1.0	1.1	1.2	1.1	.9
Farm Implements and General Country Stores	4.5	5.2	4.3	4.0	2.8
Lumber and Building Supplies	.3	.4	.4	.5	.6
Automotive—Parts and Filling Stations	4.9	4.2	4.9	4.6	3.9
Apartment House, Builders, Contractors, Govt.—Direct Sales	12.3	13.5	9.7	7.0	7.6
Jewelry and Music Stores	.9	1.0	1.2	1.3	1.6
All Others—Drug, Fuel, Dairy, etc.	5.4	5.3	5.0	4.3	5.6

Source: NEMA

### ELECTRIC RANGES Retail Distribution

	1952	1951	1950	1949	1948
Department Stores	9.6	11.1	11.7	11.7	13.6
Furniture Stores	14.5	13.2	12.8	13.1	13.3
Appliance Stores	34.6	34.7	34.7	37.1	37.1
Utilities	6.4	7.4	7.8	6.4	7.6
Hardware Stores	7.6	7.7	7.8	8.3	8.7
Plumbing and Heating Stores	1.5	1.6	1.4	1.5	1.1
Farm Implements and General Country Stores	2.7	2.7	2.6	2.7	2.3
Lumber and Building Supplies	.5	.6	.7	.8	.9
Automotive—Parts and Filling Stations	5.0	4.3	4.6	4.7	5.3
Apartment House, Builders, Contractors, Govt.—Direct Sales	10.0	9.3	9.1	7.3	3.5
Jewelry and Music Stores	.8	.9	.7	1.0	1.4
All Others—Drug, Fuel, Dairy, etc.	6.8	6.5	6.1	5.4	5.2

Source: NEMA

### WATER HEATERS Retail Distribution

	1952	1951	1950	1949	1948
Department Stores	5.9	5.8	5.7	4.0	2.2
Furniture Stores	5.7	5.4	5.5	6.3	6.6
Appliance Stores	26.7	27.3	31.2	35.5	33.3
Utilities	5.9	8.3	8.8	6.0	5.8
Hardware Stores	9.1	7.3	7.7	8.6	8.1
Plumbing and Heating Stores	27.3	28.4	22.7	19.7	26.2
Farm Implements and General Country Stores	2.3	2.4	2.3	3.0	2.6
Lumber and Building Supplies	.8	.9	.9	1.2	.6
Automotive—Parts and Filling Stations	2.8	2.8	2.9	3.4	5.5
Apartment House, Builders, Contractors, Govt.—Direct Sales	7.4	6.0	6.7	5.6	3.0
Jewelry and Music Stores	.3	.4	.4	.5	.7
All Others—Drug, Fuel, Dairy, etc.	5.8	5.0	5.2	6.2	5.4

Source: NEMA



## Air Conditioning, Commercial Refrigeration Shipments 1948-1952 From Figures Collected by U. S. Bureau of the Census

Table 1—Air Conditioning Equipment and Components and Accessories for Air Conditioning and Refrigeration Equipment: Quantity and Value of Shipments, By Class of Product, 1948-1952

Class of product	1952		1951*		1950		1949		1948	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
Condensing units, total	698,473	\$ 64,834	840,176	\$75,672	885,913	\$75,833	610,341	\$53,534	841,609	\$73,443
Ammonia refrigerants	209	300	240	404	245	352	254	346	1,129	1,799
Refrigerants (except ammonia), total	698,264	64,534	839,936	75,268	885,668	75,481	610,087	53,188	840,480	71,644
Air-cooled	659,441	50,541	796,303	58,624	835,239	59,035	570,280	40,127	797,098	56,829
Water-cooled	38,823	13,993	43,633	16,644	50,429	16,446	39,807	13,061	43,382	14,815
Compressors and compressor units, total	1,677,300	71,047	1,051,937	56,669	954,368	46,977	604,431	29,929	459,390	33,493
Ammonia refrigerants	1,825	4,708	2,401	6,465	2,652	6,756	2,240	5,620	4,156	9,209
Refrigerants (except ammonia)	1,675,475	66,339	1,049,536	50,204	951,716	40,221	602,191	24,309	455,234	24,284
Heat-exchanger equipment, total	.....	63,456	.....	*64,935	.....	61,337	.....	40,925	.....	48,552
Evaporative condensers	4,912	7,326	6,216	8,652	7,818	8,869	4,798	5,850	5,560	7,506
Air conditioning units (not self-contained)	43,482	14,534	33,263	14,636	29,704	11,671	30,044	7,997	21,633	8,276
Unit coolers, refrigeration	76,703	11,492	88,718	12,660	103,596	12,917	65,806	7,710	81,192	9,598
Other heat-exchanger equipment	.....	30,104	.....	*28,987	.....	27,880	.....	19,368	.....	23,173
Self-contained air conditioning units, total	424,105	133,101	282,488	93,573	257,263	86,913	123,709	50,584	111,620	40,008
Window-sill type	357,106	67,271	228,964	42,442	187,224	31,373	78,454	14,425	(d)	(d)
Other than window-sill type	66,999	65,830	53,524	51,131	70,039	55,540	45,255	36,159	(d)	(d)
Other air conditioning and refrigeration equipment, total	.....	40,668	.....	36,537	.....	n.a.	.....	n.a.	.....	n.a.
Centrifugal refrigeration systems	363	14,040	441	15,300	382	12,249	285	8,189	361	10,351
Ice-making machines	26,693	12,838	12,998	8,804	14,914	8,907	6,902	4,641	5,947	5,266
Year-round air conditioning units (self-contained, except heat pumps)	10,473	6,876	7,728	5,863	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Mechanical dehumidifiers, refrigeration type	72,017	5,201	75,659	4,731	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Absorption and adsorption systems and equipment	119	1,713	138	1,839	(d)	(d)	(d)	(d)	(d)	(d)

\*Revised.

n.a. Not available.

d Withheld to avoid disclosing figures of individual companies.

\*Represents unit coolers, air conditioning, for 1951 and earlier years. Also, data for surface dehumidifiers which for 1951 and earlier years were included with "Unit coolers, air conditioning" are included in "Other heat-exchanger equipment" for 1952. Separate data for surface dehumidifiers are not available prior to 1952. (See table 4 for detail on value of shipments of this item for 1952.)

\*For 1951 and earlier years, includes data for self-contained air conditioning units designed especially for use in year-round air conditioning systems. For 1952, data for these units are included under "Year-round air conditioners (self contained, except heat pumps)."

## Shipments --

(Concluded from Page 1, Column 5)

ing units designed especially for use in year-round air conditioning systems in the "Year-round air conditioners (self-contained, except heat pumps)" classification. In previous years it was included in the classification "Self-contained air conditioning units, other than window-sill type."

Table 2 shows the quantity and value of shipments of condensing units for 1951 and 1952. The breakdown of shipments of hermetic water cooled condensing units by size is new.

Table 3 presents 1951 and 1952 data on quantity and value of shipments of compressors and compressor units, and number of compressor bodies manufactured, a compressor body being defined as the basic compressor casting.

Table 4 shows data on heat-exchanger equipment, and Table 5 includes figures for self-contained air conditioning units and other types of air conditioning and refrigeration equipment.

The figures on quantity and value of shipments in this report represent completed sales of equipment. That is, units actually billed and shipped. Complete units delivered on consignment or shipped to a branch warehouse for stock are not included until such time as they are actually sold. The dollar values shown are the manufacturer's net billing prices, f.o.b. factory.

## Table 2—Condensing Units: Quantity and Value of Shipments, 1951 and 1952

(Value Figures in Thousands of Dollars)

Product	Number of companies reporting	1952		1951	
		No.	Value	No.	Value
CONDENSING UNITS, TOTAL	.....	698,473	\$64,834	840,176	\$75,672
Refrigerants (except ammonia),* total	.....	698,264	64,534	839,936	75,268
Air-cooled, total	.....	659,441	50,541	796,303	58,624
Open-type, total	26	98,055	13,727	152,407	20,748
1/2 hp. and under (except units for household refrigerators)	5	2,149	99	7,076	325
3/4 hp.	18	12,196	882	29,443	1,890
1 hp.	19	18,961	1,554	29,252	2,506
1 1/2 hp.	20	19,908	2,288	28,635	3,145
2 hp.	17	12,979	1,960	18,388	2,972
2 1/2 hp.	21	11,675	2,272	15,452	2,987
3 hp.	20	5,613	1,407	7,800	1,888
3 1/2 hp.	20	5,477	1,629	8,984	2,555
4 hp.	18	4,102	1,636	6,287	2,481
Hermetic-type, total	14	566,386	36,814	643,896	37,876
1/2 hp. and under (except units for household refrigerators)	11	98,325	4,505	196,770	8,864
3/4 hp.	12	223,793	14,195	226,208	12,599
1 hp.	13	167,531	9,339	160,080	10,289
1 1/2 hp.	14	45,322	3,719	44,662	3,792
2 hp.	8	19,663	2,518	.....	.....
2 1/2 hp.	8	7,569	1,122	16,176	2,332
Over 1 hp.	6	4,183	1,416	.....	.....
Water-cooled, total	30	38,823	13,993	43,633	16,644
Open, total	.....	30,181	12,032	36,260	15,317
1/2 hp. and under (except units for household refrigerators)	6	522	57	12,824	1,204
3/4 hp.	18	2,972	409	14,643	1,604
1 hp.	15	3,073	498	15,569	1,889
1 1/2 hp.	18	3,867	770	15,264	11,032
2 hp.	17	4,840	1,237	15,943	11,517
2 1/2 hp.	18	5,035	1,362	16,072	11,822
3 hp.	21	3,688	1,395	15,589	12,221
3 1/2 hp.	19	2,544	1,274	13,214	11,713
4 hp.	19	1,023	726	11,226	1979
5 hp.	15	794	765	1,057	1,040
6 hp.	15	612	736	765	1,109
7 1/2 hp.	11	313	531	396	720
10 hp.	10	266	469	324	585
15 hp.	9	162	321	228	463
20 hp.	11	203	486	233	570
25 hp.	7	79	242	106	374
30 hp.	8	80	275	94	423
35 hp.	4	73	301	.....	.....
40 hp.	3	35	178	86	379
Over 75 hp.	.....	.....	.....	.....	.....
Hermetic, total	.....	8,642	1,961	7,373	1,327
1/2 hp. and under (except units for household refrigerators)	3	1,136	141	(1)	(1)
3/4 hp.	4	1,826	253	(1)	(1)
1 hp.	4	1,195	202	(1)	(1)
1 1/2 hp.	5	1,741	336	(1)	(1)
2 hp.	5	1,026	284	(1)	(1)
3 hp.	6	749	253	(1)	(1)
4 hp.	5	755	355	(1)	(1)
5 hp.	4	214	137	(1)	(1)
Ammonia refrigerants (reciprocating water-cooled), total	8	209	300	240	404
5 hp. and under	6	46	40	42	41
7 1/2 hp.	4	21	17	25	29
10 hp.	7	65	95	60	91
15 hp.	6	42	77	58	116
20 hp. and over	6	35	71	55	127

\*Rating is the maximum horsepower for which a unit is catalogued corresponding to ASRE Groups I to IV conditions.

\*Includes data for corresponding size category of water-cooled hermetic condensing units. Data for total hermetic water-cooled units are not included with total for open, water-cooled units, but are shown separately below.

\*Data for water-cooled hermetic condensing units for each horsepower group in the category of 7 1/2 hp. and under are combined with the corresponding figures for water-cooled open-type condensing units to avoid disclosing figures of individual companies.

\*Rating is the maximum horsepower for which a unit is catalogued corresponding to ASRE Groups V to VIII conditions.

(Concluded on next page)



Replacement controls got you in a dither? Why mess around with makeshifts... when you can get the right replacement in short order from your Ranco wholesaler. When you stop to think there's a Ranco control for more than 4,000 replacements... far more than any other manufacturer... you'll never use any other!

**Ranco Inc.**  
COLUMBUS 1, OHIO

WORLD'S LARGEST MANUFACTURERS OF REFRIGERATION CONTROLS

New Ranco Supplement Bulletin No. 1466  
Contains dozens of exact replacement controls not previously available from any source! See a copy at your Ranco wholesaler.





## Compressors, Heat Exchanger, Refrigeration, Air Conditioning Equipment Shipped 1951-52

Table 3—Compressors and Compressor Units: Quantity And Value of Shipments, 1951 and 1952

(Value Figures in Thousands of Dollars)

Product	1952		1951	
	Shipments of Complete Units No.	Value	Shipments of Complete Units No.	Value
<b>COMPRESSORS AND COMPRESSOR UNITS, TOTAL</b>	1,677,300	\$71,047	1,051,937	\$56,669
Refrigerants except ammonia, total*	1,675,475	66,339	1,049,536	50,204
1/2 hp. and under (except units for household refrigerators)	820,099		677,670	
1/2 hp. . . . .	722,934		647,408	
1/2 hp. . . . .	426,758		349,267	
1/2 hp. . . . .	164,158		176,555	
1/2 hp. . . . . (23)	1,668,305	56,442	1,049,536	50,204
1 hp. . . . .	113,640		79,103	
1 1/2 hp. . . . .	17,668		18,685	
2 hp. . . . .	17,115		20,973	
3 hp. . . . .	28,199		27,279	
5 hp. . . . .	32,488		28,561	
7 1/2 hp. . . . .	14,943		10,059	
10 hp. . . . . (17)	1,544	799	1,070	3,497
15 hp. . . . . (14)	1,307	1,042	1,479	2,375
20 hp. . . . . (13)	688	789	855	1,197
25 hp. . . . . (12)	1,173	1,477	1,245	1,607
30 hp. . . . . (9)	403	677	288	486
40 hp. . . . . (13)	625	1,288	854	1,558
50 hp. . . . . (8)	452	947	636	1,282
60 hp. . . . . (11)	407	980	376	859
75 hp. . . . . (9)	183	596	236	781
100 hp. . . . . (7)	201	813	237	1,014
Over 100 hp. . . . . (5)	97	489	64	300
<b>Ammonia refrigerants, total†</b>	1,825	4,708	1,990	2,401
5 hp. and under . . . . . (8)	159	113	172	79
7 1/2 hp. . . . . (7)	53	53	76	60
10 hp. . . . . (9)	185	188	229	215
15 hp. . . . . (11)	124	160	199	242
20 hp. . . . . (8)	232	338	315	412
25 hp. . . . . (5)	146	251	193	327
30 hp. . . . . (8)	181	410	264	623
40 hp. . . . . (9)	191	441	223	511
50 hp. . . . . (4)	159	516	188	578
60 hp. . . . . (4)	120	403	142	540
75 hp. . . . . (5)	71	271	115	432
100 hp. . . . . (4)	83	425	102	546
101 to 200 hp. . . . . (5)	97	746	140	1,010
201 to 300 hp. . . . . (3)	25	395	24	405
301 hp. and over . . . . . (3)	25	395	19	485

\*Rating is the maximum horsepower for which a unit is catalogued corresponding to ASRE Groups I to IV conditions.

†Rating is the maximum horsepower for which a unit is catalogued corresponding to ASRE Groups V to VIII conditions.

‡Number of companies reporting shipments of complete units.

Table 4—Heat Exchanger Equipment: Quantity and Value of Shipments, 1951 and 1952

(Value Figures in Thousands of Dollars)

Product	Number of companies reporting	1952		1951	
		Shipments No.	Value	Shipments No.	Value
<b>HEAT-EXCHANGER EQUIPMENT, TOTAL</b>			\$63,456		\$64,935
Evaporative condensers, total†	34	4,912	7,326	6,216	8,652
5 tons and under . . . . .	19	520	205	632	216
5.1 to 7.5 tons . . . . .	21	396	178	368	182
7.6 to 10 tons . . . . .	22	397	278	436	306
10.1 to 15 tons . . . . .	26	532	473	620	510
15.1 to 20 tons . . . . .	25	436	480	684	679
20.1 to 30 tons . . . . .	27	774	1,046	1,096	1,252
30.1 to 50 tons . . . . .	25	881	1,599	1,168	1,938
50.1 to 100 tons . . . . .	18	873	2,517	1,063	2,859
Over 100 tons . . . . .	10	103	550	149	711
<b>Air conditioning units (not self-contained) total‡</b>	30	43,492	14,534	33,263	14,636
Suitable for location below a window§	9	23,817	2,789	n.a.	n.a.
All others					
1 ton and under . . . . .	20	8,825	1,427	\$113,417	\$12,114
2 to 3 tons . . . . .	20	2,128	766	\$17,640	\$11,306
3.1 to 5 tons . . . . .	23	2,738	1,620	2,300	1,109
5.1 to 10 tons . . . . .	23	3,256	3,336	2,405	1,444
10.1 to 25 tons . . . . .	23	3,256	3,336	3,939	3,697
25.1 to 50 tons . . . . .	18	2,203	3,425	2,895	3,756
Over 50 tons . . . . .	8	525	1,171	667	1,210
<b>Unit coolers, refrigeration, total  </b>		76,703	11,492	88,718	12,660
Ceiling and wall-mounted, total	27	73,977	7,688	85,693	8,312
2,000 B.t.u./hr. and under . . . . .	12	13,900	448	15,062	492
2,001 to 4,000 B.t.u./hr. . . . .	15	13,603	740	17,189	883
4,001 to 6,000 B.t.u./hr. . . . .	17	10,371	908	12,621	1,012
6,001 to 8,000 B.t.u./hr. . . . .	19	9,103	938	8,872	951
8,001 to 12,000 B.t.u./hr. . . . .	23	9,400	1,309	11,024	1,351
12,001 to 18,000 B.t.u./hr. . . . .	20	10,215	1,539	11,743	1,603
Over 18,000 B.t.u./hr. . . . .	16	7,385	1,806	9,192	2,020
<b>Floor-mounted dry-type, total</b>	21	2,028	2,472	2,180	2,784
5 tons and under . . . . .	15	633	552	663	531
5.1 to 7.5 tons . . . . .	15	520	521	589	608
7.6 to 10 tons . . . . .	16	316	300	260	226
10.1 to 15 tons . . . . .	15	254	398	262	395
Over 15 tons . . . . .	10	305	701	406	1,024
<b>Floor-mounted spray-type, total</b>	12	698	1,332	845	1,564
5 tons and under . . . . .	6	187	131	197	139
5.1 to 7.5 tons . . . . .	8	79	104	79	104
7.6 to 10 tons . . . . .	9	278	731	396	878
10.1 to 15 tons . . . . .	7	83	157	160	306
Over 15 tons . . . . .	6	71	209	92	241
<b>Other heat-exchanger equipment, total</b>			30,104		\$28,987
Condensers, shell and tube and shell and coil . . . . .	25		6,701		6,410
Shell and tube liquid coolers . . . . .	19		2,947		2,849
Shell and coil liquid coolers . . . . .	9		1,699		\$2,018
Fin coils-steam (other than forced-air units) . . . . .	21		4,275		3,800
Fin coils-water (other than forced-air units) . . . . .	25		4,862		4,115
Fin coils-direct expansion (except bunker gravity-type refrigeration coils) . . . . .	34		4,628		9,795
Plate-type evaporators (including bunker gravity-type refrigeration coils) . . . . .	12		4,309		
Surface dehumidifiers . . . . .	6		683		(**)

\*Revised.

n.a. Not available.

†Rating is the refrigeration condensing tonnage at 40° F. suction, 105° F. condensing temperature, and 78° F. wet bulb, entering air temperature with normal air quantity through unit.

‡Data for surface dehumidifiers are included in the 1951 figures but are excluded from the 1952 figures.

§Includes both motor-driven fan type and induced-air type, data for which were combined to avoid disclosing figures of individual companies.

||Includes data for air conditioning units (not self-contained) suitable for location below a window. Separate data for these items were not collected prior to 1952.

¶Rating is based on normal air quantity, with refrigerant temperature at 15° F. and air entering at 35° F. dry bulb to 85% relative humidity.

\*\*Not available. See footnote 1, table 1.

Table 5—Self-Contained Air Conditioning Units and Other Air Conditioning and Refrigeration Equipment: Quantity And Value of Shipments, 1951 and 1952

(Value Figures in Thousands of Dollars)

Product	Number of companies reporting	1952		1951	
		Shipments No.	Value	Shipments No.	Value
<b>SELF-CONTAINED AIR CONDITIONING UNITS, TOTAL*</b>		424,105	\$133,101	282,488	\$93,573
Window-sill type, total . . . . .	22	357,106	67,271	228,964	42,442
1/2 hp. and under . . . . .	8	19,417	2,327		
1/2 hp. . . . .	18	60,512	10,026	70,501	10,799
1/2 hp. . . . .	20	213,451	40,186	124,330	23,273
Over 1/2 hp. . . . .	7	63,726	14,732	34,133	8,370
Other than window-sill type, total*	27	66,999	65,830	53,524	51,131
Under 1 hp. . . . .				990	301
1 hp. . . . .	5	4,786	1,806	5,524	1,937
1 1/2 hp. . . . .	4	3,559	1,802	2,012	1,144
2 tons . . . . .	12	2,488	1,395	3,036	1,798
3 tons . . . . .	21	14,501	10,202	9,687	6,919
5 tons . . . . .	21	23,105	21,556	19,907	18,764
7.5 tons . . . . .	21	12,293	15,413	7,752	9,897
10 tons . . . . .	17	3,765	6,549	2,862	5,168
15 tons . . . . .	14	1,761	4,340	1,030	2,665
20 tons . . . . .	9	422	1,323	427	1,312
Over 20 tons . . . . .	7	319	1,444	297	1,226
<b>OTHER AIR CONDITIONING &amp; REFRIGERATION EQUIPMENT, TOTAL</b>			40,668		36,537
Centrifugal refrigeration systems (water and brine-chilling), total†	5	363	14,040	441	15,300
100 hp. and under . . . . .	3	40	612		
101 to 200 hp. . . . .	4	66	1,681	119	2,389
201 to 300 hp. . . . .	3	89	2,656	78	2,317
301 to 400 hp. . . . .	3	47	1,769	93	2,953
401 to 500 hp. . . . .	3	28	1,237	34	1,318
Over 500 hp. . . . .	3	93	6,085	117	6,323
Ice-making machines, total . . . . .	15	26,693	12,838	12,998	8,804
Packaged (self-contained) . . . . .	13	24,693	12,179	11,995	8,003
All others (not self-contained) . . . . .	8	2,000	659	1,003	801
Year-round air conditioning units (self-contained, except heat pumps), total‡		10,473	6,876	7,728	5,863
Without self-contained furnace . . . . .	10	6,396	2,706		
With self-contained furnace . . . . .	4	4,077	4,170	7,728	5,863
Mechanical dehumidifiers, refrigeration-type . . . . .	11	72,017	5,201	75,659	4,731
Absorption and adsorption systems and equipment . . . . .	5	119	1,713	138	1,839

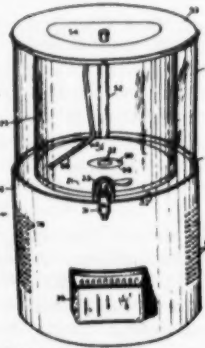
\*Rating is based on maximum compressor and fan speeds with air entering evaporator at 80° F. dry bulb and 67° F. wet bulb, and condenser water entering at 75° F. and leaving at 95° F., or air entering air-cooled condenser at 95° F. dry bulb. See also footnote 2, table 1.

†Rating is the maximum horsepower for which the unit is rated. Of the centrifugal refrigeration systems shipped in 1952, a total of 322 valued at \$11,772,000 were water-chilling type above 32° F. and 41 valued at \$2,268,000 were brine-chilling type below 32° F. The corresponding figures for 1951 were 280 units valued at \$10,016,000 for water-chilling type above 32° F. and 161 units valued at \$5,284,000 for brine-chilling type under 32° F.

‡See footnote 2, table 1.

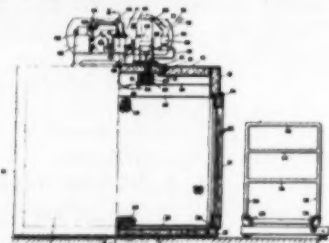
## PATENTS Week of February 24 (Continued)

2,629,229. CONTROLLED TEMPERATURE BEVERAGE COOLER AND DISPENSER. Robert R. Hull, Pasadena, Calif., assignor to Sunkist Growers, Inc., a corporation of California. Application September 6, 1949, Serial No. 114,248. 6 Claims. (Cl. 62-7.)



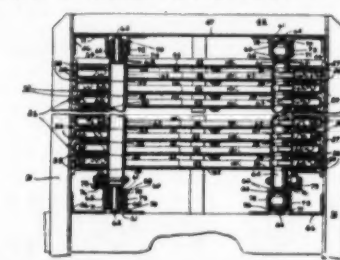
1. In a dispenser having a beverage container, a refrigerated cold plate supporting said container through contact with the bottom thereof, refrigerating mechanism for cooling said cold plate, said cold plate having an opening therein, temperature responsive control means for said refrigerating mechanism including a control bulb located in said opening in a position to contact the bottom of said container, and thermal insulation surrounding said control bulb to support the latter adjacent the cold plate substantially in the plane thereof and thermally insulate it therefrom so that the control responds primarily to the temperature of the contents of the container rather than to the temperature of the cold plate.

2,629,332. PROCESS AND APPARATUS FOR AGING MEATS AND STORING VEGETABLES. Allen Latham, Jr., Jamaica Plain, Mass., assignor, by mesne assignments, to Hodges Research and Development Company, San Francisco, Calif., a corporation of California. Application October 27, 1947, Serial No. 782,348. 10 Claims. (Cl. 62-102.)



5. In apparatus as defined and particularly for the aging of meat or the preservation of vegetables including an enclosure having insulated side walls, insulated end walls, an insulated top and an insulated bottom, an opening in said insulated top, an insulated closure for said opening, a refrigerating system mounted on said closure, refrigerating coils in said refrigerating system supported beneath said closure and extending into said enclosure, a fan carried by said closure for circulating air over said coils, a porous wall spaced from each of said side walls and extending from said rear to said front walls, an air duct leading from said coils to the space between one of said walls and the adjacent porous wall and a second air duct leading to said fan from the space between the other of said side walls and the adjacent porous wall.

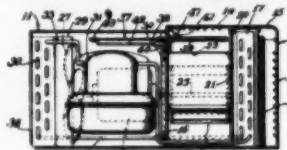
2,629,333. FOOD FREEZING APPARATUS. John C. Olsen, Campbell, and Theodore A. Dungan, Los Altos, Calif., assignors to Food Machinery and Chemical Corporation, a corporation of Delaware. Application February 24, 1948, Serial No. 10,286. 12 Claims. (Cl. 62-114.)



1. Refrigerating apparatus comprising an enclosure having a plurality of inwardly directed horizontal shelves arranged to form a number of superposed compartments each having input and output apertures, said enclosure being of such conformation that said input and output apertures are located adjacent to one another, channels extending through said shelves for the flow of a cooling medium and having inlet and outlet ports, a number of manifolds disposed horizontally above said compartments, distributor pipes each leading from said inlet manifolds to one of said inlet ports, a number of outlet manifolds disposed vertically beside said enclosure, discharge pipes leading from said outlet ports to said outlet manifolds, feed ramps attached to said shelves at the input apertures of said compartments, discharge ramps attached to said shelves at the output apertures of said compartments, an endless conveyor belt extending around vertical axes and situated completely within said enclosure, horizontal rows of pusher arms supported from said belt in horizontal alignment

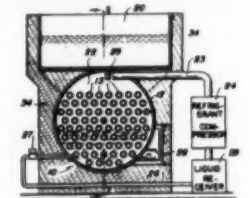
with and extending radially into said compartments, means for turning said belt in a direction from said feed ramps to said discharge ramps, and means adapted to automatically act said arms at right angles relative to the inner edges of said shelves during operation of said belt.

2,629,235. AIR CONDITIONER EVACUATION DAMPER. Arvel R. Harris, Evansville, Ind., assignor to International Harvester Company, a corporation of New Jersey. Application December 9, 1950, Serial No. 200,079. 8 Claims. (Cl. 62-129.)



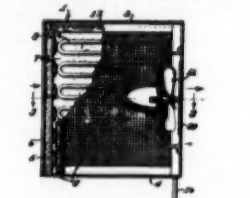
1. In an air conditioning apparatus: an air chamber having a first outlet adapted to provide for the discharge of air into a room, and a second outlet adapted to provide for the discharge of air out of the room; refrigerating means operable to condition the air in said chamber; a damper structure movable to close either of said outlets; said damper comprising a vertically extending member disposed so as to close said second outlet when said first outlet is opened, and a horizontally extending member disposed so as to close said first outlet when said second outlet is opened.

2,629,238. EVAPORATOR AND REFRIGERATION SYSTEM. Casper W. Merrill, Logan, Utah. Application May 23, 1949, Serial No. 94,793. 4 Claims. (Cl. 62-158.)



1. In a refrigeration system utilizing a fluid refrigerant and having a closed conduit circuit for said refrigerant which circuit includes a compressor and a fluid reserve chamber; an evaporator assembly forming part of the fluid refrigerant circuit, said assembly comprising, in combination, a tubular heat exchanger made up of a horizontally disposed and elongate housing containing a plurality of longitudinally disposed tubes arranged in closely spaced relationship lower in the housing so as to leave an open accumulator zone for gaseous refrigerant along and within the upper part of the housing, said heat exchanger being connected in said circuit so that liquid refrigerant enters the housing at the bottom thereof and the gaseous discharge from the housing leaves at the top thereof; means defining a closed channel circuit for brine, said circuit including the said plurality of tubes and a product freezing tank having a brine capacity greater than the combined brine capacities of the other portions of said brine circuit; insulating material substantially isolating said tank from said heat exchanger; circulating means within said brine circuit; and control means for maintaining the fluid refrigerant at a predetermined level within said heat exchanger housing.

2,629,587. APPARATUS FOR CONDITIONING AIR. Henry G. Tignor, Richmond, Va. Application March 4, 1949, Serial No. 79,687. 4 Claims. (Cl. 261-11.)



4. Air conditioning apparatus comprising a support having an inlet opening and an outlet opening, said inlet opening having an area pervious to the flow of air, a cooling surface for condensing moisture out of air passed through said area, a layer of absorbent filter material on the inlet side of said area and in intimate contact with said cooling surface whereby it will absorb moisture extracted from air flowing through said area, and means for spraying water from an external source on to said absorbent filter material, whereby air may be conditioned by its intimate contact with said absorbent filter material which is wetted by the moisture extracted from the flowing air and by moisture supplied from the external source.

(To Be Continued)

## Subscribe Now

Receive the greatest trade paper in the Industry—AIR CONDITIONING & REFRIGERATION NEWS. Published every week. Brings you latest news and vital information on household refrigeration, commercial refrigeration, air conditioning, home freezers; manufacturing, distributing, retailing, servicing, and contracting. Only \$5 per year, 52 issues.

Fill in coupon and mail today

AIR CONDITIONING & REFRIGERATION NEWS  
450 West Fort Street, Detroit 26, Michigan

Gentlemen: Send the NEWS for one year.

☐ \$5 enclosed ☐ Bill me ☐ Bill the company

Name . . . . .

Company . . . . .



# Government Contracts

## PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the various indicated U. S. Government procurement offices. This list is compiled and made available daily on a free pick-up basis. Prospective bidders may obtain complete bid sets by a request to the purchasing officer under which the purchase is listed in this Synopsis. Be sure to identify completely the bid invitation you wish by including in your request the item description, the invitation number or reference number and the opening date. This will save time in filling your request. For reasons of economy, specifications are normally not included with the bid invitations unless the specification is a new one. First time bidders on a particular item should request a copy of applicable specifications and drawings at the time the request for a bid is made.

### DEPARTMENT OF DEFENSE

Description	Quantity	Invitation No.	Opening Date
Officer in Charge, Navy Purchasing Office, Washington, D. C. Soda fountain equipment	14	6294-S	18 Aug 53
Spec. MIL-R-17071A (Ships). Corps of Engineers, U. S. Army, Office of the District Engineer, Omaha District, 1709 Jackson St., Omaha 2, Nebraska	Job	(CIVENG-25-066-54)	4 Aug 53
Ventilation and Electrical Alterations for Omaha District Office Building, 1709 Jackson St., Omaha 2, Nebraska. Contractors interested in inspecting the site of the proposed work should contact Omaha District Office, Corps of Engineers, 1709 Jackson St., Omaha 2, Nebr. The work will consist of making alterations and additions to an existing ventilating system, and making alterations to the existing electrical system within the building. Plans, specifications and bid forms will be furnished by this office upon request to the District Engineer, Omaha District, Corps of Engineers, 1709 Jackson St., Omaha 2, Nebr. Attn: Construction Division.	Job	(04-203-54-8)	20 Aug 53
Bureau of Ships, Washington, D. C. Refrigerators, reach-in type, size 4, 115-volt, single phase 60-cy. A.C. max., dimensions 25 in. wide by 24 1/2 in. deep by 50 in. high, spec. MIL-R-1834A dated 5 Aug. 1952.	45	549-659Q	11 Aug 53
District Engineer, Corps of Engineers, U. S. Army, San Francisco, California. Automatic temperature control system for three Bachelor Off. Qtrs., Fort Ord, Calif.	Job	(04-203-54-8)	20 Aug 53

### U. S. ATOMIC ENERGY COMMISSION

Description	Quantity	Invitation No.	Opening Date
U. S. Atomic Energy Commission, Procurement Branch, New York Operations Office, P.O. Box 30, Ansonia Station, New York 23, N. Y.	Contract	301-54-3	28 Jul 53
Air Conditioning. Maintenance. The purpose of the contract is to provide preventive			

maintenance and repair service to equipment.

### GENERAL SERVICES ADMINISTRATION

Description	Quantity	Reference No.	App. Bid Date
General Services Administration, Business Service Center, 1114 Commerce St., Dallas, Texas	Job	CR-754-101	4 Aug 53
Austin, Texas, P.O. (New) exhaust fans for mezzanine floor.			

### U. S. DEPT. OF HEALTH, EDUCATION, AND WELFARE

Description	Quantity	Reference No.	App. Bid Date
Public Health Service, National Institutes of Health, Bethesda, Maryland. Refrigerators domestic biological commercial.	Various	19	28 Jul 53

### CONTRACTS AWARDED THROUGH JULY 17

**Purchasing and Contracting Office, MAFB, Mather Field, Calif.** Addition and Remodeling Bldg. T-1668, Electrical System, Plumbing and Sprinkler System, Air Conditioning, Heating and Insulation, Linoleum, Terrazzo Floor and Base, and Painting. (IFB) 04-612-53-44.—Job. \$32,333.—J. A. Waterbury, 3620 19th St., Sacramento, California.

**Chicago Quartermaster Depot, U. S. Army, 1819 W. Pershing Rd., Chicago 9, Illinois.** Refrigerator, Mechanical, Household. (53-1149B).—750 ea., \$103.—320.—Westinghouse Electric Corp., 1625 K St., N.W., Washington 6, D. C.

**General Stores Supply Office, 700 Robbins Ave., Philadelphia 11, Pennsylvania.** Cooler, drinking water. (Inv. No. 4-1-559).—379 ea., \$134,052.—Sunroc Co., Glen Riddle, Penn.

**The Navy Purchasing Office, New York, N. Y.** Fan, electric.—4133 ea., \$52,453.—Mimar Products, Inc., 138 Spencer St., Brooklyn 5, N. Y.

**Fan, electric.—6577 ea., \$163,110.—Westinghouse Electric Corp., 40 Wall St., New York 4, N. Y.**

**Department of the Navy, Bureau of Ships, Washington, D. C.** Ice Cream Making Equipment. (549-615).—15, \$51,013.—F. W. Lang Co., Philadelphia, Penn.

**5th Armored Division, Post Purchasing and Contracting Office, Camp Chaffee, Arkansas.** Alterations and additions to building structures and Installation of Air Conditioning in building T-3622 and T-3725. Project and includes Plumbing, Heating, Electrical Wiring.—Job. \$56,000.—Davidson-Steele, Inc., 406 Southwestern House, Fort Smith, Ark.

**Installation of twenty-eight hot air furnaces and eighteen water heaters. Project includes excavation, trenching and backfilling for gas lines and gas piping. DA-08-006-AIV-1081.—Job. \$339,419.—G. W. Shirley & Son, 615 Main St., Van Buren, Ark.**

**Aviation Supply Office, 700 Robbins Avenue, Philadelphia 11, Pa.** Indicator: Thermometer (Cylinder Head) and Spare Parts PDEN11-3148/53.—896 ea., \$43,602.—Weston Electrical Instrument Corp. c/o Joramelon, Craig & Company, 101 N. 33rd St., Philadelphia 4, Pa.

## Todd-Ford Distributes Servel Air Conditioning

SAN ANTONIO—A new distributor of Servel, Inc.'s air conditioning division has been named for the San Antonio area.

Todd-Ford, Ltd., an outgrowth of the Servel air conditioning division of Home Appliance Distributors, Inc., is the new company which has been formed to serve dealers in this territory. The sales area of the company extends from Austin in the north to Laredo in the south, and from Del Rio in the west to Yoakum in the east.

The company, staffed by experienced air conditioning personnel, was formed by John W. Todd and John G. Ford. Todd, a chemical engineer, managed the Servel air conditioning division's operations with headquarters in San Antonio since 1948.

Ford is managing engineer. A. L. Helmy and C. J. Troilo are associate engineers. F. M. Evans is service manager, and Kathrynne Snell is office manager.

Company offices are located at 1200 N. Colorado St., here.

## Holms Wins Mercury In Revco New Dealer Contest

DEERFIELD, Mich.—Winners of the Revco, Inc. national distributors' salesmen "New Dealer" contest have been announced by J. W. Rietzke, sales promotion manager for the freezer manufacturing firm.

Alan Holms, sales representative for Globe Electric, Seattle, Wash., won the grand prize, a 1953 Mercury Monterey automobile. Holms and his wife were flown from Seattle to Detroit and driven to Deerfield where Gregg Forsthoefel, president of Revco, made the presentation of the new car.

Ten other major prizes were awarded, based on points obtained during the 18-week contest. Points were awarded for each new dealer obtained, on various size freezers sold to the new dealer, and on various freezers sold to Food Plan Clubs. Winners were:

First prize: 23-cu. ft. Revco Chill Chest freezer, Charles Visner, Dygert Distributing Co., Grand Rapids, Mich.; second prize: 15-cu. ft. Revco Chill Chest freezer, Harry Goldman, G-F Sales Co., Kew Gardens, N. Y.; third prize: 11-cu. ft. Revco upright freezer, William Feder, G-F Sales Co., Kew Gardens, N. Y.; fourth prize: 8-cu. ft. Revco Chill Chest freezer, W. Z. Thigpen, Ellis Meares & Son, Fair Bluff, N. C.

Fifth to tenth prizes were \$100 suits of clothes to: Jack Maris, Baxter Distributing, Portland, Ore.; Milton Fuglesang, Badger State Distributors, Milwaukee; W. F. Fyler Co., Corfu, N. Y.; James Jolly, A. R. Blossman, Inc., Covington, Ky.; and Jack Weisman, Morris Distributing Co., Syracuse, N. Y.

## Los Angeles Modifies Restrictions on Clothes Dryer Installations

LOS ANGELES—Twice in recent months, the Electric League of Los Angeles, Inc. has been instrumental in modifying city rules on clothes dryer installations to benefit dealers, Raymond B. Cox, president of the League, reported recently.

In one instance the League was able to demonstrate to the city building and safety commission's satisfaction that outside vents were unnecessary for clothes dryers. This averted a proposal by the building and safety department to require all electric clothes dryers to have outside vents.

In the other instance, the League obtained permission to permit all electric clothes dryers to be installed with flexible UL approved cord. The trouble arose when city electrical inspectors began strict enforcement of part of the city electrical code requiring that all electric clothes dryers be permanently connected unless classified as portable.

Through League efforts, Cox said, it was pointed out that the National Electrical Code was going to be changed in this respect and the League asked the local building and safety commission to relax its enforcement of this hardship. The commission granted the request.

## Refrigeration Services, Inc. Named Gibson Distributor

PITTSBURGH—Refrigeration Services, Inc. has recently been named Gibson distributor in the Pittsburgh area and will hold its first dealer showing in the fall, John Blattner, sales manager for the company, announced recently.

H. A. Alexander, president of the distributorship, has been in the refrigeration business since 1927. Blattner has been associated with Gibson products for many years. Three salesmen cover the firm's territory, which includes about 100 dealers.

## Gas Heating Corp. Named Westinghouse Distributor

BOSTON—Gas Heating Corp. of Norfolk, Va., has been awarded a franchise as distributor of Westinghouse unit heating equipment. The announcement was made by W. B. Cott, air conditioning sales manager of the Westinghouse Electric Corp.'s Sturtevant Div.

Headed by Eugene Sargeant as president, the Gas Heating Corp. has been associated with the heating business in Norfolk since 1950.

## Sherf Sets Up Own Company To Distribute Deepfreeze

NORTH CHICAGO — Deepfreeze Appliance Sales Div. has been formed in Minneapolis to distribute Deepfreeze home appliances and Stewart Warner radio and television, according to John C. Sherf, general manager of the new firm.

Sherf reports his distribution will cover the 90 counties in Minnesota and Wisconsin previously served by Elcon Products Corp., Minneapolis. He formerly was sales manager of Elcon Products.

## Industrial Equipment Firm Distributes Sturtevant Line

BOSTON—Industrial Equipment & Engineering Co. Inc., of Pittsfield, Mass., has been awarded a franchise as distributor of Westinghouse self-contained air conditioning equipment. The announcement was made by W. B. Cott, air conditioning sales manager of the Westinghouse Electric Corp., Sturtevant Div.

Headed by Hugh and Ray Kirkpatrick, the Industrial Equipment & Engineering Co., Inc. has been operating in the Pittsfield area since 1946.

## CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$5.00 per insertion. Limit 50 words. 10¢ per word over 50.

RATES for all other classifications \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other addresses by actual word count. Please send payment with order.

### POSITIONS WANTED

VERSATILE SALES representative or service manager. Need someone to spark your sales force, or solve your service and field engineering problems? My more than 20 years' experience in the branch sales and service departments of such leaders as Norge, Frigidaire, Kelvinator, and Copeland—and operation of own refrigeration service organization—may be just what you need. Accredited Refrigeration Engineer—graduate of Chicago Engineering Institute, granted 16 refrigeration patents. 41 years young. Will travel anywhere. Let's talk it over at your convenience. LOUIS L. FEENEY, 1827 So. Bronson Ave., Los Angeles 19, Calif. Phone REPUBLIC 3-6322.

I HAVE over fifteen years' experience in the wholesale air conditioning-refrigeration field; sales, purchasing and management. New York metropolitan area. Age in middle thirties, pleasant personality, good appearance, aggressive. Would like to make solid connection with either a manufacturer or wholesaler. Will relocate, if position warrants. Write BOX 4338, Air Conditioning & Refrigeration News.

DISTRICT OR divisional sales manager and engineer with heavy experience in commercial refrigeration, air conditioning, and heating industry desires similar position with reliable manufacturer. Wide acquaintance with dealers, wholesalers, and distributors in Middle West, central south and southwest. Specialized in sales development and organization of sales outlets. Aggressive, forceful, diplomatic. Free to travel extensively. Relocate. Write BOX 4345, Air Conditioning & Refrigeration News.

### POSITIONS AVAILABLE

WANTED: EXPERIENCED refrigeration service mechanic for commercial work in air conditioning and refrigeration. (Frigidaire and Tyler dealer). Year-round work at good pay. Apply ALLIED REFRIGERATION CO., 904 S. Erie Highway, Hamilton, Ohio, or phone HAMILTON 5-5306.

CARRIER DISTRIBUTOR, established 30 years, needs engineer with experience in air conditioning and refrigeration. Must be capable of designing and laying out large and small heating and cooling systems and commercial refrigeration systems. Write, giving particulars, to GEORGE F. DENT COMPANY, Bay City, Michigan or phone Bay City 3-3546.

AIR CONDITIONING and refrigeration service mechanic: must be experienced in installation of all types and sizes of air conditioning systems and commercial refrigeration equipment. Good working conditions in a complete service organization, steady all-year-round job. Good living conditions in city of 10,000 serving trade

area for 80 miles around Taylor, Texas. Give full details in first letter, stating age, experience and salary expected. KINCL HARDWARE CO., BOX 1125, Taylor, Texas.

WANTED—AIR CONDITIONING engineer with sales ability—3 to 5 years' experience in air conditioning field—large tonnage central plant know-how—salary \$6,500 to \$7,800, plus commission, with opportunity to become active member of firm. Call for appointment WH 4-7642—KOOL-ERAIRE CONDITIONING CO. INC., 111 Wall St., N.Y.C. Factory Franchised Westinghouse Distributors.

MANUFACTURER'S REPRESENTATIVES wanted. Complete line refrigerated store fixtures, including latest design self-service models for supermarkets; also bakery refrigerators. Contact dealers, distributors, food chains. Have several desirable territories open including Florida, Texas and West Coast. Attractive proposal. Give complete details as to experience and territory can cover, in first letter; also industry references. Write BOX 4346, Air Conditioning & Refrigeration News.

REFRIGERATION and air conditioning counterman for Chicago. Refrigeration, air conditioning and heating wholesaler. (Salary and profit sharing.) BOX 4347, Air Conditioning & Refrigeration News.

### EQUIPMENT FOR SALE

40 BRAND-NEW, in guarantee, prominent brand sealed 1/4-hp. compressors with receiver for use with F-12 or F-22, \$50.00 each, lots of ten or more. CITY MILK VENDING CORP., 58-64 Maurice Avenue, Maspeth, New York.

BRAND-NEW, LATEST model Compressor up to 5 hp. at tremendous savings! Sealed units—1/4 hp. @ \$45; 1/2 hp. @ \$55 1/4 hp. @ \$70. Model 564 3/4 hp. domes (motor compressor assemblies) @ \$33. Also 1/4 hp. DC and 25 cycle AC open-type. Quantities limited, so act now! MAXN REFRIGERATION SUPPLY CO., 440 Lafayette St., New York City Gramercy 3-8000.

ATTENTION SERVICEMEN — Send for our 1953 Catalog. Relays, expansion valves, controls, dehydrators, V belts, open & hermetic units. All new merchandise at great savings up to 50%. Sold on Money Back Guarantee. WALTER W. STARR REFRIGERATION, 2833 Lincoln Ave., Chicago 13, Illinois.

### FRANCHISES AVAILABLE

MANUFACTURER'S REPRESENTATIVES desired for various territories in United States for our new Cooler Cub bottle water coolers. These are smaller in size and weight but equal in capacity to others. Extremely attractive price setup. Give full background and territory covered. REM-COR PRODUCTS COMPANY, 321 E. Grand Avenue, Chicago 11, Illinois.

### BUSINESS OPPORTUNITIES

ESTABLISHED EXPORT firm wishes to contact manufacturers of 1/2 to 1-hp. air conditioning unit for purchase and sale under own brand. Write BOX 4342, Air Conditioning & Refrigeration News.

## COMMERCIAL AIR CONDITIONING

In Illinois city, 60 miles from St. Louis. Due to disability of corporate member, will either sell or accept partner. In 2-story concrete block building with 40' x 60' display area, workshop, office, warehouse facilities. Heating installation, 18-county distributorship. Complete refrigeration line. Grossing around \$120,000. Why not contact us today for further information? We have hundreds of businesses of all types, locations, prices available for your inspection. Call or write

HEINZ JOHNSON DUNN & ASSOC.  
1 N. LaSalle, File A-4342, Chicago 2

## CHIEF DEVELOPMENT ENGINEER

We are substantially increasing our products and facilities and require a Chief Development Engineer.

Qualifications are as follows:

1. B.S. degree in either mechanical or electrical engineering.
2. A minimum of seven years experience in development and laboratory procedure in refrigeration or air conditioning.
3. Proven creative ability with initiative to follow program through to completion.

The right man can secure a top-level position with a sound financial company doing a volume business. In addition to the salary, the position carries profit sharing.

BETZ CORPORATION  
Hammond, Indiana

LAUGH,  
LEARN,  
PROFIT!

Read

## "ONE FOOT IN THE DOOR"

by GEORGE F. TAUBENECK

The funniest and most stimulating book ever written on refrigeration and air conditioning merchandising. Every tested selling idea is illustrated with an hilarious story. Use the ideas and the stories in YOUR business.

Price: ONLY \$3.00

Order directly from

CONJURE HOUSE

DIV., Business News

Publishing Co.

450 W. FORT ST.

DETROIT 26, MICH.

Please send a copy of One Foot in the Door.

☐ \$3 enclosed ☐ Send bill 7-27-53

Name .....

Address .....

City ..... State .....



## Noisy Room Units--

(Concluded from Page 1, Column 4) has since moved his air conditioner to the other side of the house and installed a fan in his bedroom window.

Mrs. Gershberg, however, contends that the conditioner still disturbs their slumbers. "I can still hear the machine and Arkow also has a fan in his bedroom. Between the two of them, it is still too noisy," she claimed.

Magistrate Surpless asked Mrs. Gershberg to be reasonable. "Noises are relative," he declared. "That which annoys one may not annoy his neighbor. Near my home in Brooklyn there is a chocolate factory. Some people think the smell of chocolate is delightful. To me it is obnoxious."

The magistrate suggested that he and the district attorney sit in Mrs. Gershberg's bedroom and listen to the noise. But Mrs. Gershberg asserted that the noise of the unit was masked by street noises during the daytime. She thought they ought to come at night for a fair test.

She said that the patrolman on the beat had listened to the noise one night and offered to be a witness in her behalf. But this patrolman was now on vacation.

She also volunteered the information that an air conditioning company representative had offered to install a room cooler in her window free so that she could keep her window closed and not notice the noise of Arkow's cooler.

Mrs. Gershberg refused. "I would not be bribed," she declared.

At the request of Mrs. Gershberg's attorney the magistrate adjourned the hearing until July 30, when the policeman will be back from his vacation.

New York City newspapers carried detailed accounts of the hearing and reported that the courtroom was crowded with industry and public representatives interested in the outcome. Morris H. Schneider of the Refrigeration and Air Conditioning Contractors Association of New York was one of the observers present.

## Servel Raises Prices--

(Concluded from Page 1, Column 5) substantial wage increases have been granted to Servel employees and that the cost of steel and other materials has risen sharply in recent months. "For several years," Jones said, "Servel has tried constantly to reduce the prices of its products, to improve them in performance and appearance, and to add new and exclusive features."

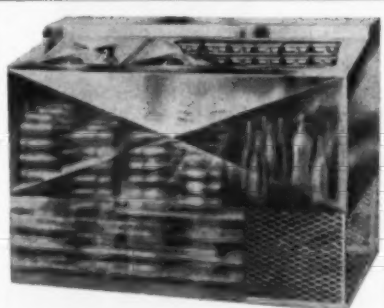
"Our 1953 prices for the various models in our several lines of products were made more competitive than ever. Today our lines represent the most outstanding values to be found in their respective fields."

"We do not yet know how much prices will have to be increased on Aug. 1 to cover higher costs, but Servel prices will continue to be as competitive as possible."

Servel's products include gas and electric household refrigerators, home freezers, portable refrigerettes, room air conditioners, gas and electric water heaters, all-year air conditioning equipment, and electric refrigeration condensing units.

## JUST ASK US

Turn to "What's New" Page for useful information on new products.



**FLO-COLD Stainless Steel  
DRINKMASTER  
ICE CUBER-COOLER**

"A CASE OF COOL JUDGMENT."

Mfg. by  
**United Frigorator Engrs.**  
Menominee, Mich.

Write for free 8" x 10" photos

## Room Cooler Sales--

(Concluded from Page 1, Column 2) C. & G. Air Conditioning Co. in suburban Royal Oak, declared: "I'm running my last ad this week and that is only because this week has been so warm. I have three units yet that I hope to get rid of. But I'm not ordering any more. I may even have trouble selling these."

"Of course we will have some hot days in August and even in September. But even though it is hot in the daytime it will cool off at night. And that's bad for sales."

Joe Ganci, of the L. A. Wagner Co. in suburban Hazel Park, said his company was not going to do any more promoting. "We are just going to follow up the prospects that have been developed so far. The people who have been holding out for a price will come into the market in August, hoping to get a unit cheaper. We might get some business from them. But we aren't ordering any more units. We're just letting our stocks run down to zero."

## FEW INQUIRIES AFTER JULY 1

A spokesman for Northern TV and Appliances in Royal Oak declared: "We got a lot of inquiries up to the first of July, but since then we haven't had a thing. We're through for this year."

W. G. Bain, of the J. R. Miller Corp., air conditioning and refrigeration specialists, also believed "the season is over except for a few strays."

He said, "We try to get people to install coolers in the winter, but they will stall off till spring and then stall some more until the hot weather hits. Then they want a unit right away and we can't handle all the business. You can't change human nature, I guess."

Only firm interviewed that was still promoting air conditioning sales was Square Deal Refrigeration, a contracting firm. Alfred Moran, a company salesman, thought that "we will have another month to go at least (this was in mid-July). They say it's going to be a hot August, so we ought to have good sales. We're still promoting air conditioning sales, though I couldn't say just what we are doing because I don't handle that end of it."

C. A. Nutting, service manager of the C. A. Nutting Co. also opined that the season would go at least until Aug. 1. "We have a lot of hot weather ahead yet," he said, "and we are still promoting in a small way. But, our big business is in television and we just sell air conditioning to fill in the slack TV season."

Though all of the dealers interviewed agreed that sales this year have been as good as last year and possibly a little better, many were critical of the "cut price" atmosphere in which they had to compete. They feel that air conditioning is following the same destructive path as TV.

## LOW OVERHEAD CREATES COMPETITION

A Royal Oak dealer complained that refrigeration service men who operated out of their homes and had practically no overhead would come into jobs he was trying to close and offer the prospect a considerably better price. He said that they could buy from the distributor at the same price he could and could sell it for considerably less and still make the same amount of profit.

In other instances, he said that he found himself bidding against his own distributor.

Ganci, the Hazel Park dealer, asserted: "We don't get any territory protection from our distributors. There isn't enough business so that 50 other people in our territory—dealers, electricians, plumbers, and servicemen—should have access to the units at the same price we do. If they don't handle the line regularly, they can always call up the distributor and get a unit."

"So the only thing for us to do is to go in with our price and get out. We handle five brands and push the first unit the customer points to."

Cheney reported that he had tried to develop a new market for room coolers in trailer camps. But, he said, he soon discovered that the trailer camps don't have wiring adequate enough to handle room coolers.

"I put one in where the owner assured me that the power was adequate to handle room coolers. But the voltage drop was terrific and we had to take the unit out. So did another dealer that tried it. The trailer camps have their power lines overloaded from 15 to 20% already, without air conditioning."

## Chemical Lab Uses Filters To Remove Odors from Air

CHAUNCEY, N. Y.—The research laboratory of the Stauffer Chemical Co. here, in the center of suburban Westchester County, runs no risk of offending its residential neighbors, filtering all exhaust air through activated carbon adsorbers which trap any entrained odors.

Organic synthesis in agricultural chemicals, process studies, and plant assistance comprise the work of the laboratory, and mercaptans, hydrogen chloride, hydrogen sulphide, sulphur dioxide gases and various other odorous organic vapors are occasionally released, fume problems which are typical of organic and industrial laboratories in general.

Air from each of the individual lab rooms is drawn up to the roof where an auxiliary blower forces it through a bank of 15 Connor Engineering Dorex activated carbon cell-type filters before it can reach the surrounding atmosphere. Each of the cells has a capacity of 700 cu. ft. of air per minute.

## Hoist Another for the Boys In the State Capitol

LITTLE ROCK, Ark.—The Legislative Roll Call Committee called recently for engineering estimates for the air conditioning of the House and Senate Chambers at the Capitol.

The committee is charged with obtaining air conditioning for the two chambers. A special liquor tax was levied by the 1953 legislature to finance the project.

## Crosley-Bendix--

(Concluded from Page 1, Column 3) here, concentrating on distribution and merchandising problems for the corporation. He will assist Shouse in consolidating the sales operations of the two divisions before assuming his New York responsibilities.

Hector J. Dowd, vice president and director of Avco, who has been general manager of Bendix Home Appliances Div. in South Bend, will return to the executive staff in the New York office.

Parker H. Erickson, general sales manager of Bendix Home Appliances, will become director of sales for products of both Crosley and Bendix Home Appliances, and will make his headquarters in Cincinnati.

"This move," Emanuel said, "will result in marked benefits to everyone—to Avco, to our distributors, to their dealers, and to the public in general."

"We believe that in placing these two lines under the direct supervision of one distributor," he said, "we will be able to serve both the dealers and the public more effectively. We will reduce distribution costs, a very necessary step for companies, distributors, and dealers today."

"We will be in a stronger position to coordinate our sales programs for both Crosley and Bendix Home Appliances products, thus making our advertising and promotional efforts more effective. This will result in increased volume for the company, the distributors, and the dealers."

Emanuel noted that "while this method of distribution is not unique, combining these two strong and leading lines creates, we believe, the best

franchise in the appliance industry."

Crosley and Bendix Home Appliances are both carrying on extensive advertising programs. The advertising for the combined new division will be handled by the three agencies now representing Crosley and Bendix Home Appliances.

Benton & Bowles is the agency for Crosley appliances; Batten, Barton, Durstine & Osborn represent Crosley electronics, and Earle Ludgin & Company, Bendix laundry equipment and kitchen appliances.

A new wholesale finance plan has been developed to assist dealers in carrying adequate and balanced stocks of the company's products, Emanuel disclosed. This finance plan will be available to dealers through the Crosley-Bendix Home Appliances distributor.

"We feel sure that the operating efficiencies and economies resulting from this move will be reflected in our business as well as that of the distributors and dealers," Emanuel continued.

"We have made this move in view of the new conditions under which we will be selling in highly competitive markets. We want to concentrate and streamline our activities with these two premier lines, working closely with a limited number of distributors and dealers to increase the sales and profits for all of us."

Emanuel said that American Kitchens Division will continue its individual status.

Consolidation of the Crosley and Bendix Home Appliances management follows by two weeks the integration of Crosley and Bendix Home Appliances subsidiaries in Canada as a part of the new Avco of Canada, Ltd.

*These Bush conditioners make a market "Super"*

Shop in comfort, work in comfort. Economy Market of New Brighton, Pa., offers conditioned air to customers and employees alike. Six row deep Bush Comfort Conditioners handle the comfort cooling requirements of an average of 300 people per hour. For the heating season two row hot water coils in each unit provide a convenient and economical heating system.

For offices, stores, shops, beauty parlors, restaurants, transportation terminals, taverns, the Bush Comfort Conditioner is the ideal solution to the problem of high quality, low cost air conditioning.

Bulletin 530, free upon request, contains complete data.

**Bush Manufacturing Company**

WEST HARTFORD 10, CONNECTICUT